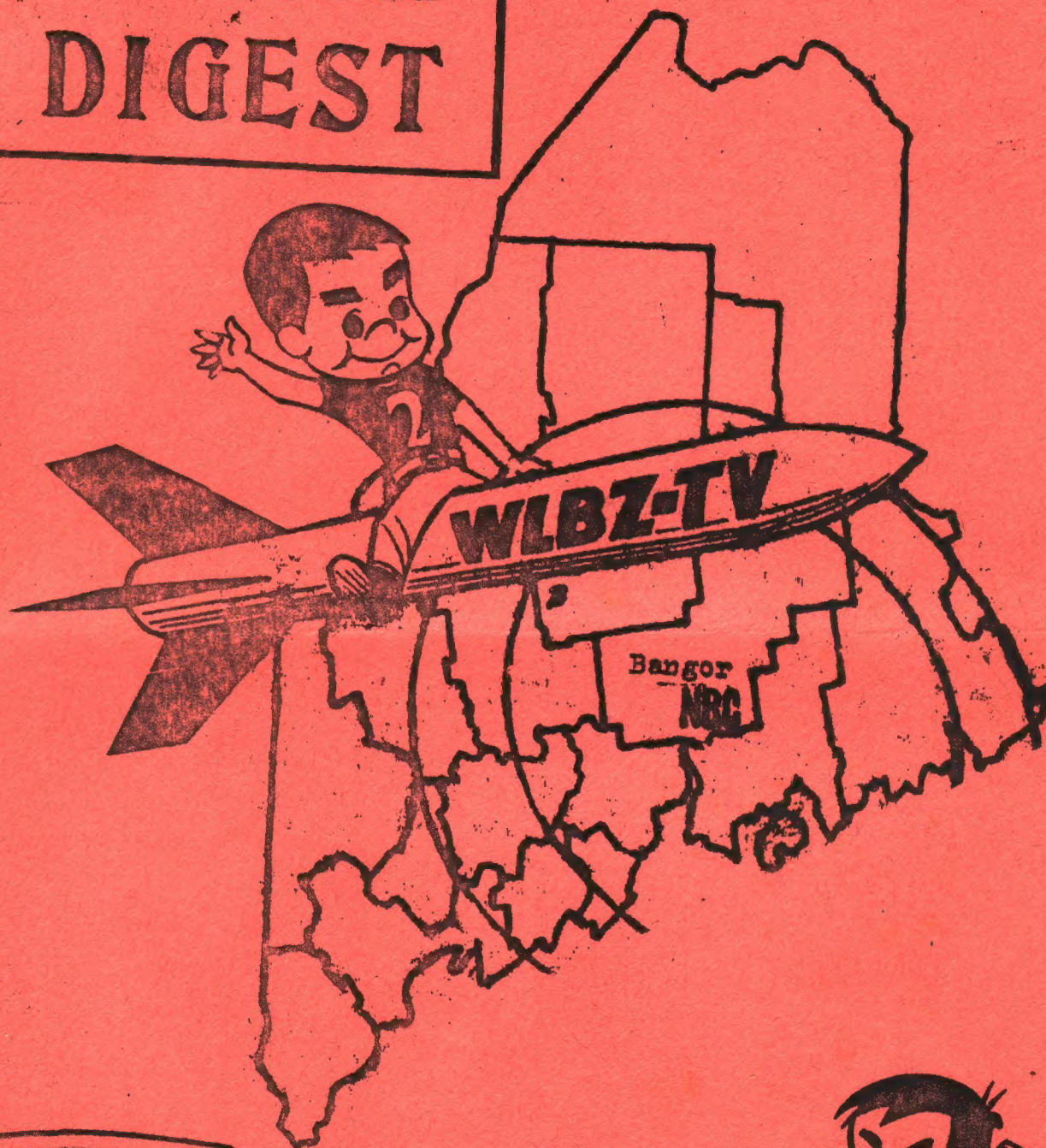


VHF-UHF DIGEST



POWERful Channel 2

WLBZ Television, Inc.
Bangor, Maine



VHF- UHF DIGEST

is the official monthly publication of the
WORLDWIDE TV-FM DX ASSOCIATION, published
at Milwaukee, Wisconsin, USA, about the
first of each month. Make checks payable
to the club at Box 5001, Milwaukee, 53204.

Samples 30¢ or equivalent, either issue.

Regular Edition: \$5 outside North America.
In USA, Canada, and Mexico: \$4.50/1 yr.,
\$8.50/2 yr., \$12/3 yr., \$15/3 yr.

Overseas Edition: \$3.50 per year or equiv-
alent in US funds. Special arrangements
on request for those who cannot or do
not wish to send currency or checks.
To all rates, add \$2/year if first class.

JUNE, 1969 Vol. 2, Nr. 6

Effective with this issue, the membership dues are being raised, as previously announced. We are sorry this has become necessary but increased postage, and in particular the increased size of the DIGEST make it impossible to maintain our old rates. Many of you have taken advantage of the early warning to renew for 2 or 3 years. The past 2 months have been phenomenal in money received in all 3 categories: new members, renewals, and sample DIGESTs sold. We expect the deluge will now taper off but Summer DX arouses the interest of some people who otherwise may have put off joining.

Interest in the convention has grown continuously and it is unfortunate that we don't have a few more weeks of preparation. You will be receiving this VUD after the convention but we are publishing all or most of it before going down to Matteson, Illinois over Memorial Day.

Next on the schedule will be the ANARC Convention in Toronto, Ontario 15-17 August at the Lord Simcoe Hotel, hosted by WTFDA editor Wayne Plunkett. For further information or to make reservations, contact Wayne directly at: 124 John Street, Weston, 492, Ontario. Since the CNE (Canadian National Exhibition) will begin that same weekend, there will be something else to see in Toronto, but at the same time this will create a hotel room shortage so we suggest that you contact Wayne ASAP about your plans. (The good time had by WTFDAers at the 1968 Omaha ANARC convention led to our having our own convention this year in addition to the ANARC convention at which we're represented.

If you're making reservations to Wayne, please tell him your date and time of arrival and departure, number of persons in party and type of accommodations desired. Single prices are \$10-15, double \$15-20; a third person may stay in a room on a cot for \$4 additional.

Registration fee and itinerary have not been announced yet, but when they are WTFDA will publish them. More next month.

I have received an offer to type a tape-sponders list again, (updated), and a regular column for tape-sponders. If interested please make it known to HQ--or even if not interested. I repeat, an editor has volunteered, but would you support such a column?

Some of you old-timers who've been in the club for over a year may recall our promise to provide booklets of the best articles from back-issues. We have not done so for 3 reasons: lack of interest, lack of help, and a sufficient supply of back-issues from which these articles would be drawn. Recently 2 people have expressed interest in purchasing booklets, but the other 2 problems still remain. VUDs #1-7 have been sold out for 6 months and only 2 people that I can recall have ever expressed an interest in buying them, until recently. Number #12 has just been sold out but other issues are still in good supply except #9, 14, 16 and 17. I personally feel the first booklet should include only articles from soldout issues, but your suggestions are solicited.

FCC NEWS & DATA

WAYNE PLUNKETT
124 JOHN STREET
WESTON, ONTARIO
CANADA

FM

Here we go with my first crack at the FCC News and Data FM Column. All comments and criticisms, constructive and destructive, are welcome.

FM STATIONS OPERATING (as of February 27, 1969)

Commercial FM - 1967

Educational FM - 367

Total Authorized Stations On Air - 2334

FM STATIONS OPERATING (As of April 10, 1969)

Commercial FM - 1990

Educational FM - 372

Total Authorized Stations On Air - 2362

(What a change in 6 weeks!)

APPLICATIONS FOR NEW FM STATIONS

Goulds, Fla. - 98.3 mc - 3 kw.	Anderson, Ind. - 97.9 mc. - 50 kw.
Murfreesboro, N.C. - 98.3 mc. - 3 kw.	Fulton, Mo. - 97.7 mc. - 3 kw.
#Collegeville, Pa. - 89.3 mc. - 1w.	#Urbana, O. - 91.7 mc. - 1.43 w.
Camarillo, Cal. - 95.9 mc. - 3 kw.	Lehigh, Pa. - 103.1 mc. - .478 kw.
#Glen Ellyn, Ill. - 88.5 mc. - 10 w.	Sarasota, Fla. - 105.5 kw. - 3 kw.
#Maryville, Mo. - 90.5 mc. - 112kw.	Springfield, S.D. - 88.5 mc. - 10 w.
Estherville, Ia. - 95.9 mc. - 3 kw.	Benton, Ill. - 98.3 mc. - 85.5 w.
Carson City, Nev. - 94.7 mc. - 29 kw	Canton, N.J. - 101.7 mc. - 3 kw.
Syracuse, NY - 100.9mc. - 1.15 kw.	Waverly, O. - 100.9 mc. - 1 kw.
#Irving, Cal. - 89.9 mc. - 10 w.	Belton, Tex. - 106.3 mc. - 3 kw.
#Minneapolis, Minn. - 88.1 mc. - 3.9kw.	Ames, Ia. - 97.7 mc. - 2.49 kw.
#Kansas City, Mo. - 88.5 mc. - 50.8w.	Hilo, Haw. - 97.9 mc. - 30.74 kw.
Linesville, Pa. - 101.7 mc. - 3 kw.	St. Johns, Mich. - 92.1 mc. - 3 kw.
#Perowan, Utah - 90.9 mc. - 10 w.	Culpeper, Va. - 103.1 mc. - 3 kw.
#Alamosa, Colo. - 90.9mc. - 10 w.	Fayette, Ala. - 92.9 mc. - 27.1 kw.
#Fairfield, Iowa - 89.5 mc. - 1 w.	Ardmore, Okla. - 95.7 mc. - 100 kw.
Charleston, S.C. - 93.7mc. - 25.9k.	Rapid City, S.D. - 93.9 mc. - 30.24kw.
Eagle Pass, Tex. - 92.7 mc. - 3 kw.	Greenville, Ky. - 106.3mc. - 3 kw.
#Great Bend, Kan. - 91.9 mc. - 10.96 kw.	
Carlisle, Pa. - 93.5 mc. - 416 w.	
Carlisle, Pa. - 93.5 mc. - 315 w.	

STARTS AUTHORIZED

WPAG-FM Ann Arbor, Mich. - 107.1 - 3 kw.
KLYQ-FM Hamilton, Mont. - 95.9 mc. - 2 kw.
WDVL-FM Vineland, N.J. - 92.1 mc. - 3 kw.
WNHV-FM White River Junction, Vt. - 95.3 mc. - 3 kw.
WSBM (FM) Saginaw, Mich. - 106.3 mc. - 3 kw.
WELR-FM Roanoke, Ala. - 95.3 mc. - 1.25 kw.
WTRS (FM) Dunnellon, Fla. - 102.3 mc. - 3 kw.
WLBE-FM Leesburg, Fla. - 106.7 mc. - 40 kw.
WMJM-FM Cordele, Ga. - 98.3 mc. - 3 kw.
#WDGC-FM Downers Grove, Ill. - 88.3 mc. - TPO 10 w.
WNPQ (FM) New Philadelphia, Ohio, - 95.9 mc. - 3kw.
WJJM-FM Lewisburg, Tenn. - 94.3 mc. - 3 kw.
KSHN (FM) Sherman, Tex. - 96.7 mc. - 3 kw.

STARTS AUTHORIZED (cont)

WNHV-FM White River Junction, Vt. - 95.3 - 3 kw
WSBM(FM) Saginaw, Mich. - 106.3 - 3 kw
WELR-FM Roanoke, Ala. - 95.3 - 1.25 kw
WTRS(FM) Dunnellon, Fla. - 102.3 - 3 kw
WLBE-FM Leesburg, Fla. - 106.7 - 40 kw
WMJM-FM Cordele, Ga. - 98.3 - 3 kw
#WDGC-FM Downers Grove, Ill. - 88.3 - TPO 10 w
WNPQ(FM) New Philadelphia, Ohio - 95.9 - 3 kw
WJJM-FM Lewisburg, Tenn. - 94.3 - 3 kw
KSHN(FM) Sherman, Tex. - 96.7 - 3 kw
WVOP-FM Vidalia, Ga. - 97.7 - 3 kw
WJLM(FM) Salem, Va. - 93.5 - 3 kw
#KOBG(FM) Joplin, Mo. - 91.1 - TPO 10 w
#KNOS(FM) Marshall, Mo. - 91.7 - TPO 10 w
WMHR(FM) Syracuse, N.Y. - 102.9 - 6.7 kw
WNOE-FM New Orleans, La. - 101.1 - 100 kw
#KGCC(FM) Denison, Tex. - 89.7 - 28.5 kw
KJRL(FM) Liberal, Kan. - 99.3 - 2.6 kw
KPKY-FM Princeton, Ky. - 104.9 - 3 kw
WELO-FM Tupelo, Miss. - 98.5 - 100 kw
KGMO-FM Cape Girardeau, Mo. - 100.7 - 28.5 kw
KAFF-FM Santa Fe, N.M. - 97.3 - 28 kw
WLNG-FM Sag Harbor, L.I., N.Y. - 92.1 - 3 kw
WMFD-FM Wilmington, N.C. - 100.9 - 2.15 kw
KNWC(FM) Sioux Falls, S.D. - 96.5 - 100 kw

FINAL ACTIONS

Pompano Beach, Fla. - 102.3 - 100 kw
Harrodsburg, Ky. - 99.3 - 3 kw
Slidell, La. - 105.3 - 57.2 kw
Missoula, Mont. - 100.1 - 2.85 kw
#Reading, Ohio - 89.3 - 15.2 w
#Mercer Island, Wash. - 90.1 - 10 w
Del Rey Oaks, Calif. - 107.1 - 3 kw
#Greensboro, N.C. - 90.7 - 10 w
Apache Junction, Ariz. - 107.1 - 3 kw
New Port Richey, Fla. - 105.5 - 1.65 kw
Buford, Ga. - 102.3 - 3 kw
#Honolulu, Hawaii - 90.5 - 10 w
#Gaston, Ind. - 91.1 - 15 kw
Farmington, N.M. - 96.9 - 29.5 kw
#Youngstown, Ohio - 88.5 - 22.4 kw
Poteau, Okla. - 107.3 - 70 kw
#Arkadelphia, Ark. - 88.1 - TPO 10 w
#Augusta, Ga. - 90.7 - 780 w
Dawson, Ga. - 92.1 - 3 kw
Washington, Ga. - 100.1 - 2.4 kw
Boulder, Colo. - 94.7 - 30 kw
Neenah-Menasha, Wis. - 99.3 - 3 kw

CALL LETTER APPLICATIONS

Modesto, Calif. (Mt. Pleasant Special School District) - #KDHS(FM)
Shelbyville, Ill. (Shelbyville Broadcasting Co.) - WSHY(FM)
Chester, S.C. (Chester County Broadcasting Corp.) - WCMJ(FM)
Randolph Center, Vt. (Vermont State Colleges) - #WVTC(FM)
Edwardsville, Ill. (Southern Illinois University) - #WSIE(FM)
Youngstown, Ohio (Youngstown State University) - #WYSU(FM)

CALL LETTER APPLICATIONS (cont)

Murray, Ky. (Murray State University) - #WKMS-FM
Worcester, Mass. (Worcester Collegiate Radio) - #WICN(FM)
Bellefontaine, Ohio (Charles H. Chamberlain) - WHPO(FM)
Arkadelphia, Ark. (Henderson State College) - #KSWH(FM)
Farmington, N.M. (E. Boyd Whitney) - KRAZ(FM)
Poteau, Okla. (Indian Nation Broadcasting Co.) - KINB(FM)
Harrisonburg, Va. (Madison College FM Radio) - #WMRA(FM)

CALL LETTER ACTIONS

Wilmington, Del. (Mt. Pleasant Special School District) - #WMPH(FM)
Hillsboro, Mo. (Junior College District, Jefferson County) - #KHKA(FM)
St. Louis, Mo. (University of Missouri) - #KBMJ-FM
Myrtle Beach, S.C. (Grand Strand Broadcasting Corp.) - WTGR-FM
Chico, Calif. (Chico State College Foundation) - #KCHO(FM)
Boynton Beach, Fla. (Palm Beach County, Florida) - #WHRS(FM)
Pocahontas, Ark. (adrian L. White Inc.) - KPOC-FM
Wallingford, Conn. (Choate School Foundation) - #WWEB-FM
Modesto, Calif. (thomas Downey High School) - #KDHS(FM)
Pacific Grove, Calif. (Lawrence Gahagan and Darryl Sragow) - KOCN(FM)
Groton, Conn. (Lawrence Reilly and James Spates) - WSUB-FM
Danville, Ill. (Kickapoo Broadcasting Co.) - WIAI(FM)
New Prague, Minn. (TMF Communications) - KTMF(FM)
Altavista, Va. (Altavista Broadcasting Corp.) - WKDE-FM
Rutland, Vt. (Central Vermont Broadcasting Corp.) - WHWB-FM

APPLICATIONS RE EXISTING FM STATIONS

WALM-FM Marshall, Mich. to change freq. to 104.9 - TPO .938 kw
KTXN-FM Victoria, Tex. to change freq. to 98.7 - TPO 20 kw - ERP 40.2 kw
WWJC-FM Superior, Wis. to change station location to Duluth, Minn.

FINAL ACTIONS

WPAT-FM Paterson, N.J. to change ERP to 16.5 kw
WDOL-FM Athens, Ga. to change ERP to 50 kw
#WVSH(FM) Huntington, Ind. to change ERP to 920 w
#KBOO(FM) Portland, Ore. to change ERP to 3.5 kw
KPFM(FM) Portland, Ore. to change ERP to 100 kw horiz. 40 kw vert.
WMNA-FM Gretna, Va. granted station to operate on 106.3 - 3 kw
KSIB-FM Creston, Iowa granted CP to change ERP to 3 kw
KAFE-FM Santa Fe, N.M. to change ERP to 28 kw
#KRWG(FM) University Park, N.M. to change ERP to 2.45 kw
WLBK-FM DeKalb, Ill. to change ERP to 9.5 kw
WBAB-FM Babylon, N.Y. to change ERP to 3 kw
KEAR(FM) San Francisco, Calif. to change ERP to 82 kw
#KCRW(FM) Santa Monica, Calif. to change ERP to 26.5 kw
KGIW-FM Alamosa, Colo. to change ERP to 2.80 kw
WMOD(FM) Washington, D.C. to change vertical ERP to 26.5 kw
KICD-FM Spencer, Iowa to change ERP to 92 kw
WHUN-FM Huntington, Pa. to change ERP to 30 kw
WWOD-FM Lynchburg, Va. to change ERP to 3 kw
KACA(FM) Prosser, Wash. to change ERP to 3 kw
#KUSC(FM) Los Angeles, Calif. to change ERP to 30 kw
WFTM-FM Maysville, Ky. to change ERP to 470 w. vert.
WHTG-FM Eatontown, N.J. to change ERP to 3 kw
#KUHF(FM) Houston, Tex. to change freq. to 88.7 mc
WVOW-FM Logan, W.Va. to change ERP to 15 kw hor. 13.5 kw vert.
WFMR(FM) Milwaukee, Wis. to change ERP to 39 kw
WKYN-FM San Juan, P.R. to change ERP to 3.6 kw
KUKI-FM Ukiah, Calif. to change ERP to 3 kw

FCC NEWS & DATA

GARY A. OLSON, APT. 107
5901 W. Brown Deer Rd.
Brown Deer, Wis. 53223

TV

STATIONS OPERATING (AS OF MAY 7, 1969)

UHF ETV	100
JHF Com	175
VHF ETV	76
VHF Com	506

Total Authorized Stations On The Air 857

New Stations Reported On The Air:

WLXT (TV) ch. 60, Aurora, Ill., reported testing with RETMA-TP and audiotape as of Mid-May (station invites DX reports).

New Target Dates Reported:

WATL-TV, ch. 36, Atlanta, Ga., target date August 1st

Miscellaneous Changes Reported:

WVUE (TV) ch. 12, New Orleans and WYES-TV, ch. 8 (ETV) will be exchanging channels in the near future according to information released by the FCC

FCC COMPLETED ACTION

New Grants:

Las Vegas, Nev., ch. 13, 104.2 kw. (FCC has granted currently operating KSHO-TV to Talmac Inc.)

*Belton, Tex., ch. 46 (Central Texas College) 160 kw.

Escanaba, Mich., ch. 3 (WFRV Inc.) 100 kw. -- will be satellite of WFRV-TV, Green Bay

Call Letter Changes:

WBMO-TV, ch. 36, Atlanta, Ga., now WATL-TV

New Call Letters Issued:

Miles City, Mont., ch. 3, granted KYUS-TV

Other Changes Allowed:

WHNT-TV, ch. 19, Huntsville, Ala., ERP to 929 kw. - ant. to 1750'

KBSC-TV, ch. 32, Corona, Calif., ERP to 1450 kw. - ant. to 2940'

KEMO-TV, ch. 20, San Francisco, Calif., ERP to 1706 kw. - ant. 1270'

WATL-TV, ch. 36, Atlanta, Ga., ERP 2030 kw. - ant. to 1090'

WWOM-TV, ch. 26, New Orleans, La., ERP to 661 kw.

KHSD-TV, ch. 11, Lead, S.D., ERP to 316 kw.

WCYB-TV, ch. 5, Bristol, Va., ERP to 10.25 kw.

WAEO-TV, ch. 12, Rhinelander, Wis., ERP to 288 kw. - ant. to 1660'

NOTE: WLXT-60 had gala dedication on May 18th; now programming regularly with announced 217 kw.

ACTION APPLIED FOR OR REQUESTED

Applications For New Stations:

Del Rio, Tex., ch. 10 (Inter-American Television) 257.7 kw.

*Grandview, W.Va., ch. 9, (W.Va. ETV Authority) 291.1 kw.

*South Bend, Ind., ch. 34 (Michiana Public Broadcasting) 203 kw.

*Youngstown, Ohio, ch. 45 (Youngstown State University) 176.1 kw.

Lincoln, Neb., ch. 45 (Capital City TV Corp.) 210 kw.

TIDBITS AND MISCELLANEOUS ITEMS OF INTEREST TO TV DXERS

W72AN, ch. 72, Gary, Indiana, a translator with 3400 watts ERP and antenna height of 180' is reported to be repeating the programming of WCAE (TV) ch. 50 St. John, Ind. This one should be a good target for Illinois-Wisconsin-Michigan-Indiana DXers with such high power!

Seven stations are to be tied together in the Pennsylvania ETV network. Included will be WVIA-TV Scranton, WLVT-TV Allentown, WPSX-TV Clearfield, WUHY-TV Philadelphia, WQLN (TV) Erie, WITF-TV Hershey, and WQED-TV in Pittsburgh. Stations will be linked between 3 P.M. and 11 P.M. seven days a week.

The twelve station Kentucky ETV network will add WFPK-TV in Louisville to its lineup soon.

* THANKS TO: *
* Morrie Goldman *
* & Dennis Smith *
* for *
* column *
* contributions *
* this month. *

EASTERN TV DX

Morrie S. Goldman WA9RAQ
8046 South Euclid Avenue
Chicago, Illinois 60617

For all television reporters east of the Mississippi River.....JUNE 1969.....
July Deadline: June 16

Well, it appears that the 1969 Skip season has started off with a flying nose dive. Very, very few Es openings were reported this month and even fewer was the number of openings producing IDs. Lets just hope that this year, we're just having a slow start and the best is yet to come— it could hardly be worse. From all indications the best opening was on April 24 bringing in KOOK-2 Billings Montana and KXLF-4 Butte Montana to the Wisconsin, Illinois, Indiana area. Other short openings of fair strength occurred on May 6th and 9th again bringing in KOOK-2 and also CHCT-2 respectively.

Gary A. Olson, 5901 W. Brown Deer Rd., Apt. 107, Brown Deer, Wisc. 53223 (CDT)
4-11: Trops; afternoon and evening 5:30PM WSJV-28, WNDU-16 (new); 6:00PM WSBT-22, 6:30PM WMKG-54 (new), WCIU-26. 4-19: Trops in evening: WSBT-22, WSJV-28, WNDU-16, WCIU-26, WFLD-32. 4-29: WMKG-54, 5-3: WILX-10, WOOD-8. Still no skip seen here. Have been checking channel 2 regularly, but to no avail.

Dave Pomeroy, 3516 Lansdowne Dr., Apt. B, Lexington, Ky. 40503 (EST)
I finally got my VHF UHF antennas mounted on the edge of the roof and, as a consequence, have begun pulling in some of the nearer "distant" stations with some in Ohio and Indiana seen almost daily— much to my displeasure. As of today (May 5) there has been no sign of skip, but when it does appear, my total of 41 should increase drastically. March and April produced the following: 3-16: WTVN-6 Columbus, Ohio. 3-17: WCET-48 Cincinnati, Ohio. 3-18: WLW-C-4 Columbus, Ohio 7:00PM. 4-3: WILX-10 Jackson, Mich. 10:00PM. Un-ID 56 (Detroit??) 10:30PM, WSBT-22 South Bend, Ind. 11:20PM. 4-6: WCHS-8 Charleston, W. Va. 6:30PM, WSJK-2 Sneedville, Tenn. 8:00PM w/s/on, WKEF-22 Dayton, Ohio 11:15PM, WKJG-33 Ft. Wayne, Ind. 11:40PM, WPTA-21 Ft. Wayne, Ind. 11:50PM, WKTR-16 Kettering, Ohio, WLBC-49 Muncie, Indiana 12:00M, UnID-26 (Springfield, Ohio??), 4-7: WIMA-35 Lima, Ohio 7:00AM w/s/on, WVIZ-25 Cleveland, Ohio 7:30AM w/TP very clear, WFIE-14 Evansville, Indiana 8:30AM, 4-21: WBIR-10 Knoxville, Tenn. 8:30AM, WFBM-6 Indianapolis, Ind. 4-29: WATE-6 Knoxville, Tenn. Bill Draebs channel 35 from Madisonville, Ky., is WKMA-TV. (Thanks Dave. Your KETN news has been forwarded to FCC News and Data editor Gary Olson. MG)

Dave Janowiak, 3661 South 46 Street, Greenfield, Wisc. 53220 (CST to 4-27)
I just completed my new antenna installation to replace the five VHF, TV, UHF, etc., antennas and mast lost in a bad December ice/snow storm. I now have a JFD LPV 19 element 2-13 (same as before) at 30'; Finco (Allied) 7' parabolic dish for UHF at 35'; Finco FM-6 FM antenna at 30', and vertically polarized Winegard 2-83 Colortron at 35'. All are rotatable. The TV installation was completed only a few weeks ago, so I haven't had alot of time to evaluate. 4-19: Improved trops to E and SE on high band and UHF; Ft. Wayne UHFers in well in PM. 4-20: UHF still good in AM with most stations seen to E & SE similar to April. 4-23 thru 4-25: 1730 to 1800 weak E skip on ch.2, only ID was KOOK-2 on the 24th with excellent signal for 10 minutes. 4-28 thru 30th: Improved trops, all bands to E, SE, & S; no new ones. 5-4: 1800, excellent UHF trops, with my 10 or 12 UHF locals greatly improved in strength. 5-6: 0715, TP of WFI-18, in solid. 5-7: Trops signals up greatly in all directions, all bands, particularly to SW & S. ahead of approaching cold front. Peoria, Rockford, etc. UHFers in quite well, and WEEK in quite well & photographed finally. WIMA-35 Lima three times stronger than usual. Generally, my VHF trops is poorer than with my previous antenna set-up, due primarily to use of 300ohm shielded line in place of 300ohm open line and antenna mounted 10' lower. But UHF is greatly improved over the old corner reflector that I had been using (my JFD LPU-21 had deteriorated so badly its gain was only 3db and F/B ratio was zero!). I get some sort of signal from WIMA-35 Lima, O. & WLF-18

most mornings, and KFIZ-34 FondDu Lac, WFLD-32 Chicago and Madison UHFers are rved- with perfectto fair strength daily. South Bend UHFers are watchable 75% of time. In fact, except for one day, the signal from WFLD-32 Chicago has been better than all Chicago VHFers. DX time is still limited: 0700 to 0715 and after 1730 on weekdays. Log at about 320. 73's Dave. (Good to see you had time to report this month Dave. I hope more are to come. MG)

F. S. Dombrowski, Hq. (CDT)

I put up my CL4X on rotor finally on May 3rd. The LPV-U21 was installed a week earlier. 5-6: WXYZ-7 and WILX-10 VG at 0000-0130. KOOK-2 (by Es) briefly at 1600. 5-7: Signals from Indianapolis and Fort Wayne tent. 5-9: KOOK-2 tent at 1240; CHCT-2 1320-1420. 5-14: WCAE-50 at 1900 (good); WLXT-60 very weak at 2200 along with Rockford, Muskegon, Chicago UHFers, all snow free. Tent. signals from WICD-15, WAND-17, Peoria, Madison and South Bend UHFers all VG. 5-15: Peoria weak in AM. WISH-8 tent, WKJG-33 tent. UnID aurora in evening.. 5-16: KWWL-7 tent. at 0700.

Morrie Goldman, Editor (CDT after 4-26)

4-24: 1720 KXLF-4; 1730 KOOK-2 (o/local WBBM) both Es. Es in PM was also noted on 4-28, 4-29, and 4-30 but of short duration — no IDs. 4-30: 21061 First logging of W72AN Gary, Indiana which duplicates WCAE-50. Signal is now normal reception. 1-1: Weak Es CCI noted off and on during the entire day. 5-4: MS - 0559 UnID-5 (WTTG?), 0626 WWL-4, 0646 KRLD-4, 0652 KGNC-4. 5-9: MS 0625 TP - Looked like KFDX-3. 5-14: 2115 WEXT-60 Aurora, Ill. testing and asking distant viewers to phone them if they were seen. 5-19: 2035 WUAB-43, 2040 WGTE-30, 2050 WDHO-24. 5-24: Es 1741 WRC-4, 1758 KATC-3. 5-25: 1150 KWAB-4, 1200 KACB-3, 1215 KFDX-3, 1220 KMID-2 (o/local WBBM). Morning tropes have improved on a regular basis. Lafayette, Fort Wayne, Peoria, Springfield, etc. are very common mornings.

In seems that each month at the end of the column an opening pops up, so I mention it and say further details next month. Well, it happened again. Es openings appeared on 5-24 and 5-25, as mentioned in my report. The complete reports of these openings will be in next months column.

73 and Best DX,

Morrie

STATION BREAK

Editor: M. Goldman
8046 S. Euclid Ave.
Chicago, Ill. 60617
Deadline: July 18

STATION BREAK is a bi-monthly feature of the VHF-UHF Digest and WTFDA. Rates are as follows: Member (non-commercial) 2¢ per word. Non-member (non-commercial) 5¢ per word. Commercial 8¢ per word; other ad rates, such as for custom, half, or full page ads, upon request. ZIP code may be included free of charge. WTFDA reserves the right to refuse any ad which we feel may be misleading to our readers, or in poor taste.

WANTED: TV Guides before 1963. Jeff Kadet, 8047 Park Overlook Drive, Bethesda, Maryland 20034

A5 Magazine Devoted to amateur TV, (ATV).. Subscription: \$2 per year (6 issues). Sample copy upon request. A5 Magazine, 150 150 Delong Avenue, Dumont, N.J. 07628

WTFDA still has a limited quantity of some VUD back issues. To members, the cost is only 25¢. WTFDA, PO BOX 5001, Harbor Station, Milwaukee, Wisconsin 53204

WHY write your address when you can stamp it instead? For complete rates send SASE to: D. E. T. Stamp Service, P. O. Box 5001, Milwaukee, Wisconsin 53204

Extra gear or magazines laying around? Sell them with a VUD ad! VUD ads are low in price and circulate to an ever growing number of DXers, already over 100 each month. Whatever your needs, buy or sell, try a VUD ad.

STATISTICS

EDITOR: Glenn Hauser
Box C 8638, Lowry AFB
Colorado 80230 USA=

JUNE
1969

New reporters. Michael B. Northam and Mark Kozlowski. Thank you, gentlemen! Those of you have sent in partial records for the lower channels, don't forget the remainder!

CHANNEL 10 SKIP TVDX RECORDS

Call	Location	Prop Miles	DXer, Location	Comments
WCAU	Philadelphia PA	MS 870	John Bettersworth, Starkville MS	
TOTAL for 1 station!		870	(see end of list, p. 2 for another; sorry!)	

CHANNEL 10 TVDX RECORDS (Trops, groundwave, unknown)

WBIQ	Birmingham AL	615	Robert Cooper, Oklahoma City OK	
WALA	Mobile AL	975	Art Collins, Buffalo NY	
KOOL	Phoenix AZ	285	Glenn Hauser, Langmuir Lab NM	
KTVE	El Dorado AR	485	Terry L. King, San Angelo TX	
KERO	Bakersfield CA	820	Cecil Morrow, Elma WA	now ch 23
KBET	Sacramento CA	260	Ed Albright & Charles Wood, Mt Ashland OR	now KXTV
KOGO	San Diego CA	240	Dennis Smith, Wasco CA	
WLCY	Largo FL	470	David Cox, Carrollton AL	
WLBW	Miami FL	685	David Cox, Carrollton AL	
WALB	Albany GA	565	Bedford Brown, Hot Springs AR	
WGEM	Quincy IL	645	Robert Seybold, Fredonia NY	
WTHI	Terre Haute IN	600	Glenn Hauser, Enid OK	
KBLR	Goodland KS	345	Glenn Hauser, Oklahoma City OK later KWHT, KLOE	
KLOE		tie	Robert Cooper, Oklahoma City OK was KBLR, KWHT	
KAKE	Wichita KS	1000	Robert Seybold, Fredonia NY	
KLFY	Lafayette LA	555	B. J. Bingham, Festus MO	
WCBB	Augusta ME	140	Jeff Kadet, Needham MA	
WJAR	Providence RI (MA)	605	Frank Hill, Gallipolis OH	
WILX	Lansing MI	425	B. J. Bingham, Festus MO	shares with WMSB
WWUP	Sault Sainte Marie MI	320	Don Eggert, South Bend IN	
WDIO	Duluth MN	275	Bill Draeb, Kewaunee WI	
KROC	Rochester MN	675	Art Collins, Buffalo NY	
KTTS	Springfield MO	580	Bill Draeb, Kewaunee WI	
KLOEC	Shelby MT	0	Dennis Smith, mobile	of KFBB-5
KLOAF	Troy MT	0	Dennis Smith, mobile	of KXLY-4
KOLN	Lincoln NB	940	David Nieman, Buffalo NY	
KSTF	Scottsbluff NB	810	Dave Janowiak, Milwaukee WI	
KBIM	Roswell NM	190	Glenn Hauser, Langmuir Lab NM	
WTEN	Albany NY	690	Bill Draeb, Kewaunee WI	
WLEC	Rochester NY	505	Bill Draeb, Kewaunee WI	was WVET
KNOX	Grand Forks ND	615	Barney Rauch, Peoria IL	now off
KMOT	Minot ND	215	Jim Dillon, Regina Sask	
WBNS	Columbus OH	tie	Bernard Koenig, Regina Sask	
KTEN	Ada OK	665	Bedford Brown, Hot Springs AR	
WFBG	Altoona PA	730	Dave Janowiak, Milwaukee WI	
WCAU	Philadelphia PA	895	Bedford Brown, Hot Springs AR	
WIS	Columbia SC	1045	Bedford Brown, Hot Springs AR	
WBIR	Knoxville TN	675	John Cody, Middletown CT	
WKNO	Memphis TN	775	Glenn Hauser, Enid OK	
KFDA	Amarillo TX	655	Bill Draeb, Kewaunee WI	
KZTV	Corpus Christi TX	305	Glenn Hauser, Langmuir Lab NM	
KWTX	Waco TX	1010	Don Ruland, Holly Hill FL	was KSIX
WAVY	Norfolk VA	1365	William Hider, Binghamton NY	
		tie	Richard Italiano, Binghamton NY	
		590	Don Ruland, Holly Hill FL	

more

WSLS	Roanoke VA	800	Carlton Howington, Homestead FL
WMVS	Milwaukee WI	350	Bill Meers, Lagrange KY
CKRD2	Banff Alta	0	Bill Heusmann, Banff Alta properly CKRD-TV-2
CFPL	London Ont	580	B. J. Bingham, Festus MO
CKGN	North Bay Ont	490	Carter Bays, Culver IN now CFCH
CFTM	Montreal PQ	265	Al Kopec, Himrod NY
ZAZ	St. Johns Antigua	205	Robert Cooper, Frederiksted VI
WBNB	Charlotte Amalie VI	40	Robert Cooper, Frederiksted VI
TOTAL for 50 stations		26970	(ties counted once. Average: 538 miles)

Here's another "skip" record, omitted by error above; skip total is then 1205 miles
 CFPL London Ont Aur 335 Carl Boecher, Milwaukee WI

Analysis. By total distance, channel 10's top DXers are: Brown, 3170 miles; Draeb, 2705; Hauser, 2500. By number of records held: Hauser, 6; Draeb, 5; Brown and Cooper, 4. Note the rather unusual WCAU situation: the tropics record is longer than the skip! Stations for which no records have been found are: KREY Montrose CO, WMEM Presque Isle ME, KWCM Appleton MN, KMED Medford OR, KOAP Portland OR, KWSU Pullman WA, KWRB Riverton WY.

CHANNEL 26 TVDX RECORDS

WATU	Augusta GA	5	Morrie Goldman, Augusta GA
WCIU	Chicago IL	445	Dave Pomeroy, Lawrence KS
WCBC	Anderson IN	40	Larry Vehorn, Speedway IN now off
KYNE	Omaha NB	165	Dave Pomeroy, Kansas City KS
WNYP	Jamestown NY	445	Bill Draeb, Kewaunee WI
WSWO	Springfield OH	365	Bill Draeb, Kewaunee WI
WTVK	Knoxville TN	615	Bill Draeb, Kewaunee WI
WETA	Washington DC (VA)	155	Dennis Smith, Little Creek VA
TOTAL for 8 stations		2235	

CHANNEL 27 YVDX RECORDS

KVVG	Tulare CA	110	Allan Preston, Turlock CA was KCOK; now off
KTSB	Topeka KS	560	Bill Draeb, Kewaunee WI
WKYT	Lexington KY	470	Bill Draeb, Kewaunee WI
KMTC	Springfield MO	580	Bill Draeb, Kewaunee WI
WKBN	Youngstown OH	415	Bill Draeb, Kewaunee WI
WTPA	Harrisburg PA	265	Mark Lewis, Downsview Ont was ch 71
WYAH	Portsmouth VA	325	Art Friese, White Plains NY
WKOW	Madison WI	525	Richard and David Nieman, Buffalo NY
TOTAL for 8 stations		3250	

CHANNEL 28 TVDX RECORDS

KCET	Los Angeles CA	95	Mort Meehan, North Palm Springs CA was KTHE
WJSP	Columbus GA	580	Gary Olson, Bloomington IL
WSJV	South Bend IN	380	David Kanaar, Buffalo NY
WAFB	Baton Rouge LA	370	Rich Lowry, Temple TX now ch 9
WGSF	Newark OH	400	Bill Draeb, Kewaunee WI
WBRE	Wilkes-Barre PA	630	Bill Draeb, Kewaunee WI
TOTAL for 6 stations		2455	

CHANNEL 29 TVDX RECORDS

KBAK	Bakersfield CA	190	Allan Preston, Turlock CA
WKSO	Somerset KY	70	Dave Pomeroy, Lexington KY
KHNE	Hastings NB	360	Robert Cooper, Oklahoma City OK
WCDB	Hagaman NY	230	King Schafer, Kenmore NY now off
WIBF	Philadelphia PA	325	Mark Lewis, Downsview Ont
TOTAL for 5 stations		1175	

Analysis. Our UHF pro DXer Bill Draeb continues to capture the honours. On 26 he has 3 records at 1425 miles total; Pomeroy has 2 at 610. On 27, Draeb DX accounts for 2025 miles, about 2/3 of the total on the channel. On 28 Draeb has 2 records at 1030 miles, and on 29 it's a free-for-all.

ADDITIONS AND REVISIONS TO TVDX RECORDS

ZHCH	2	Chihuahua Chih	965	Stan Wigh, Kingsburg CA
"CBXT"	5	Edmonton Alta	1330	Bill Draeb, Kewaunee WI
WCKT	7	Miami FL	MS 1210	Tom Hidley, Crystal Lake IL
KVII	7	Amarillo TX	MS 870	Tom Hidley, Crystal Lake IL
WTWV	9	Tupelo MS	80	David Cox, Carrollton AL
WKZT	23	Elizabethtown KY	480	Bill Draeb, Kewaunee WI
WNYE	25	New York NY	295	Guy Prevost, Massena NY

Comments on standards. Dennis Smith: "...let /Bill/ Smith's NNRC section continue to be the voice of the verie enthusiasts; and let there continue to be a voice for the rest of us for which logging of reception is the most important thing. Also...there /are/ about as many opinions of what a verification is as there are DXers." Jerry Dee: "I think it ought to be done on the basis of stations each man can PROVE he's picked up, either by written verie or photo. ... How on earth do you prove /reception without veries/? You don't. I guess it's gentleman's word." (Trouble is, anyone who wants to can get veries thru fraud, so we may as well rely on "gentleman's word" from the outset. Overreliance on veries seems to me a childish "prove it!--or I won't believe you." It's about time DXers outgrew this syndrome and concentrated on DXing, with verification-seeking an optional "extra." These were comments of your editor.) Jerry continues: "I feel that a man should be able to count a station "twice" when it changes channels, because it normally involves enough work on the part of the station to qualify it for a new transmitter setup...." "I feel that a mere change of call letters does NOT, I repeat, does NOT constitute a new station. For instance...KDPS-TV, channel 11...is now known as KDIN-TV. Well, the same tower exists in downtown Des Moines about 450 feet high. They still have an ERP of about 30,000 watts, and still have the same basic program format. I still receive them over the same 90-mile plus path in the same way I did before. Poorly. It's not a new station by any measure of the imagination. Share-time stations, unless using separate transmitters, should not be counted as more than one station. ... Same station received regardless of call signs at different parts of the day." Gary Olson: "Weirdo CATV pick-ups are in a class by themselves. Recognize them - yes. But not with the regular station loggings. Translators too: recognize them - yes. But list them separately. What I am saying is that these loggings are also non-competitive... Maybe you should ask for comments in your column." Hank Holbrook: "...why don't we just compromise this thing out. Some DXERS count channel changes, others count call changes and still others count neither or both. Sooo- /Have four columns in the rank listing: Total Veries, Stations Logged, Call changes, Channel Changes./" Bruce Elving: "It was refreshing to note that you...recommend not counting a station again if it changes call letters, unless a deletion or other hiatus had first occurred. This is a rule that should be followed by everybody, I believe, if totals are to be compared by DXers. ...I feel that standards of counting stations should follow as closely to FCC licensing procedures as possible. Thus, it is not the transmitter location that should be counted as the reference but the licensed community. I don't think that artificial stations, like radiations from a CATV cable, should be counted.... I also agree that verifications do not constitute positive proof (what really does?), and should not be regarded as seriously as some DXers seem to. ...I do not go along with counting a station twice if it changes channels." Bruce is referring to FM throughout; The standards were designed with TV in mind, altho ideally they should be equally applicable to both. Further comments welcomed from anybody.

France DX TV Club has sent their bulletin #8, with a key to RAI (Italy) TPs by number with location (1p); DX reports for Aug-Nov 68 from Peltier (2p), Czeczott, June 68 (2p) et al. Copies for 10¢/page and SASE.

Until the next, 73 de Glenn

June, 1969

VHF/UHF DIGEST

European Scene

Roger Bunney, Trelawne, Cupernham Lane, Romsey, Hants, SO5 8JH, England.

The first 3 months of 1969 have on the whole been very quiet for TV/DX in England. Indeed only the odd short burst of Sp. E and MS were logged during Jan. Paging activity was noted in Romsey towards the end of the month. On the 26th, a P. Station signing ???905 Charlotte was heard, the first time for this one, but mainly the P. activity was fading just out of the noise and back. No reports are to hand re the Aurora at the start of Feb. I did not observe any effects of this event what-so-ever, but reports in the radio amateur books tell of 'signals were in the main very weak'. Both 2 and 4 metres were open at this time. From the 15th-28th. Feb., paging activity increased to a high level, on some days the 35.22 and 35.58 mc freqs. were completely jammed with so many signals. It is interesting to note that the first stations to be heard in this area are KIY508 Orlando, and KIF65I Ft. Lauderdale. The peak of activity was the 26-28th. Feb, falling off at the start of March. I gather that at this time, BBC-I audio was being received at a number of locations in N.A. Throughout the month of Feb., TV/DX was still very quiet, with only odd bursts. The signal to be expected most days via MS is Cottbus in E. Germany ch. E4, and is in 5 days in 7. From 4-9th. March, the high pressure system over the UK to mid Europe opened up tropics to the East and South East. UHF was sepecially active, with stations received in the mi-Midlands from Holland, the new Belgium UHF stations, across W. Germany and into E. Germany. A number of Dxers have also received the new UHF stations opening up in Sweden, on ch. 23 and 30, these stations being in South Sweden. I was active during this opening, although my results can never be too good for tropics, due to living in a valley with high trees to the East. However the cross Channel path gave good signals of the French 2nd. Chain, including excellent programme material of the Eurovision Athletics match from Yugoslavia. At the start of this item, the Yugoslav. test pattern was wrongly 'punched up', thus giving the viewer the Yugoslav. test pattern of UHF. However, very little was in from South of Paris of UHF, being mainly concentrated to the East. Reception here also included the Dutch Service on ch. 27, 29, and 32. After the evening of the 9th. March, tropics faded, and for the rest of the month, TV conditions have been back to normal. On the morning of 27th, I was very suprised to note TVE-Spain on T/C at 0753 BST (0655 GMT). At the end of the month a large sunspot group was seen on the Sun, but up to the 4th. April, no activity associated with this group had been observed.

NEWS ITEMS. On March 19, in the late afternoon, the 1250 foot mast at Emley Moor collapsed, taking with it the programmes of Yorkshire Television, and BBC-2. It is thought that a large quantity of ice fell from the mast, thus causing a sudden jerk in the system and snapping one of the stay wires. A few days later, a temporary mast was erected, about 250 feet high, but it will be some time before the main mast can be replaced. Recent press comment has mentioned a 650 ft. mast from Sweden is coming. The following day, the 1250 foot mast at Belmont had taken a 5° tilt. Both masts are of similar structure. They are 9 feet in diameter, of steel shell construction, a lift facility is available in the mast, to virtually the top for servicing use. Until recently these masts were amongst the highest structures in Europe. A third mast of similar construction, at Winter Hill has reported no trouble, but this is only 1000 ft. high.

Amman, Jordan. The 2 transmitters at Amman on ch. E3 and E6 carry the Arabic and Hebrew services. Test card used is the old BBC type C, but with the word Jordan following the wera- letter C. This is radiated from 1700 local time, and programmes start at 1800. Recently, they started to radiate at times the Marconi Resolution chart. Films used for programmes usually have the sound track in English, with the appropriate subtitles supered. Programmes end at times up to midnight. The transmitters have an ERP of 100 kw. on both chs.

Good TV/DX and Best Wishes,

Roy

Conducted by
David T. Janowiak

.....
JUNE
TECHNI/CORNER
.....

3661 South 46 Street
Greenfield, Wisc., 53220

EVALUATION OF CONSUMER REPORTS DX EQUIPMENT RATINGS

As noted last month, Consumers Union has denied me the use of its ratings of equipment (receivers, antennas, preamps, etc.) that might be used for DXing. However, since some of their ratings and articles are a must for members contemplating purchase of specialized equipment -- and since some of their ratings are almost useless -- I have prepared this month a "capsule" evaluation of past related articles, including my own opinion as to the articles worth.

Consumers Union publishes a monthly magazine -- Consumers Report -- in which it tests and rates a wide variety of products from cars to food to hi fi to building materials, etc. Articles of personal interest such as stock purchase, insurance, hazards of smoking, etc. are included. Although available on the newstand, a subscription of one, two or three years is handier, and it provides "free" a yearbook that combines the ratings of several previous years into one concise handbook. This yearbook can be purchased at some newstands for about \$2.

I've found through the years that ratings of FM, hi-fi, and stereo equipment are the best, with TV receivers and TV antennas so-so. Each article, however, is in the language of the layman without insulting the expert.

Monthly magazines should be stocked in major libraries. If not, and you are interested in an article, let me know and I'll go into greater detail via a letter.

FREQUENCY OF REPAIR OF COLOR TV; MAY, 1969

This article is a must for anyone thinking of a color TV purchase. It notes, for several color sets sold in the last four years, whether repairs needed were above average, average, or below average. About a dozen manufacturers are listed (but chassis aren't) based on 50,000 people who answered questionnaires. All manufacturers are not listed since the samplings of some were too few for accurate evaluation.

Briefly, the results are not at all surprising to anyone who has studied schematics and chassis layout of recent color sets or who has repaired or talked to people who have repaired color sets. The clear-cut leader: Zenith, with Sylvania a close second. That is, Zenith and Sylvania required the least repairs. At the other end (most number of repairs) RCA, with Sears and Packard Bell close. Mind you, this is not an indication of how well the set delivered a color picture (sensitivity, resolution, etc.) but an indication of how often (and how expensive) repairs were needed. Because of component selection and arrangement, two sets with "identical" circuitry electrically not only can perform entirely differently, but can vary greatly as to ease of repair.

Although Heathkit was not included in the list (because CR feels not everyone can build it), Heath rated way ahead of Zenith, another fact that will get little argument from kit builders or electronic buffs.

Two items must be noted because they could have contributed to the results: (1) Since owners of some sets can buy a "repair package", it is more likely that these owners will be critical and demand service for small items that might not trouble owners who had to pay for repairs beyond the normal warranty. This could contribute, for example, to Sear's poor showing. (However, Sear's sets, in my opinion, have always rated just a notch above such winners as Muntz, DeForest, etc.) (2) Heath's excellent frequency of repair record might be attributed in part to (a) owner pride (I built it; the pictures excellent) and reluctance to worry about minor repairs and (b) owner's electronic knowledge, which could result in owner repair and, therefore, no need for a service men. (The built-in Heath troubleshooting aids sure help alot, also.) Still, several contributors reported repair bills of \$100 even for the quality Heath sets.

CU has published several articles in the past on color sets, but admits that it's no small gamble risking several hundred dollars for entertainment that will deliver less than expected pictures at a cost (antenna plus repairs) that's more than expected initially.

HI FI STEREO KITS; MARCH 1969

Again, an excellent article for anyone interested in building hi fi and stereo systems (amplifiers, tuners, receivers). In addition to numerous pictures that should relieve the "fear" of those who have never built kits, an evaluation of electrical operation and ease of building is provided. Terminology used in specifications is explained well. Even circuit modifications are given, undoubtedly with the cooperation of the kit manufacturer. This article also notes (1) what kit combinations offer the best performance vs price ratio, (2) policies when trouble is encountered, and (3) what chance exists for trouble, even if built by the "experienced hand". (Having built several kits, from small one tube grid-dip meters to the most lengthy and complex Heathkit AR15 AM-FM-STEREO receiver -- the AR15 makes the Heath TV look easy -- let me say that the chance of a complex kit working the first time is against the builder. Wiring errors, misalignment (even "factory" aligned items), and component defects in complex equipment are common. Of 14 Heath color kits built by engineering friends of mine, only two worked immediately.)

This article is a must for all, including the veterans.

SMALL SCREEN B/W TV SETS; MARCH 1969

While the test facilities of CU and the quality of testers is adequate, all TV sets in a class are rated against each other. Never is a comparison made of a tested class of sets vs another class of a few years previously. Consequently, a set might rate acceptable or very good this year in comparison to others in that class, but is poorer electrically, for example, than a set tested two years earlier that rated only fair.

Chassis numbers and list price are given. Also, response in fringe areas, both UHF and VHF, is listed as a definite aid to DXers.

The above comments pertain to all TV sets tested by CU. For the critical needs of a TV DXer, however, not enough info is given. Review of a schematic or past frequency of repair checks for that manufacturer might help, but with the current trend toward a cheapening of the small screen B/W sets, the outlook is not good for this class of product.

FRINGE FM RECEIVING ANTENNAS; FEBRUARY, 1969

This is one of the most meaningful ratings, not only because of its excellent evaluation of many available FM antennas, but also because of an almost "hidden" lesson that bears out what I've known and preached for years: The best (best overall gain, front-to-back ratio, impedance match, etc) is not always obtained with the biggest (and most expensive) antenna in a series, or family, of antennas of identical design by the same manufacturer. In fact, for anyone to advocate the purchase of, say, the \$100 (biggest) model of a log periodic just because it's a good design and it should be the best in the series is pure manure. More of this in a later article.

Back to the article on FM antennas --- Antennas from most of the major antenna manufacturers are tested, although, obviously, not every FM antenna manufactured could be tested. While my spec sheets on DX equipment are many, and I thought I had "seen them all", a few manufacturers I'd never heard of are represented in this review.

Briefly, those needing a good FM antenna can be reassured that one of the best buys awaits them with the purchase of the Finco FM4G, a six element, all-channel dual driven yagi. Its gain, F/B ratio, and impedance match was about the best, and it went up against some

of the "monsters" of multielement yagis and log periodics. All of this for only 15 or 16 dollars (Allied, Lafayette) and weighing four pounds. (This Finco is the same as the FM4 sold 10 years ago; the "G" now stands for gold alodizing.)

My own tests have verified that the F/B ratio is indeed sharp with the FM4G, as three FM stations on the same frequency can be received easily when tropics is good with little co-channel interference.

CU tested antennas for all electrical characteristics plus ease of assembly and construction. A "capsule" review of each is usually given. For example, gain, best of all tested; F/B ratio, good; impedance fair, with some mismatch on high end; assembly and construction, good.

TABLE MODEL COLOR SETS; JANUARY, 1969

Comments similar to B/W set article discussed previously.

ANTENNA PREAMPLIFIERS; JANUARY, 1969

For those few who can benefit by the addition of a mast-mounted antenna preamplifier, this article should help. Tested are mostly VHF only, with a few V/U combos. The J.C. Penneys catalog #3122 (made by Finco) and Blonder Tongue VAMP2 rated best (VHF only).

CU does not go into the "ifs" and "buts" of preamps as much as I'd like, but it does point up the two main cases where a preamp could help; if used with (1) an older TV (because of high noise figure of RF amp) or (2) with high loss T-line.

I'll go into this tricky subject of preamps in an upcoming article - PREAMPS: WHO NEEDS THEM?

TV ROOF ANTENNAS; FEBRUARY, 1968

Unfortunately, suburban and near-fringe TV antennas only are tested. The Channel Masters 3614G, Jerrold PIX-45, and JFD LPV-60 rated in the top class; however, do not assume that the bigger "brothers" of these antennas are necessarily the best! Several spec sheets show that, especially for log periodic/loaded director combos such as the JFD and Jerrold, a middle model (usually the pure log periodic) has the best impedance match, purest pattern, and "flattest" gain (a must for color).

This article is, basically, of little use to a DXer, since all models in a class or all types of antennas are not tested. And again, ratings are against other antennas. Gain, F/B ratio, and impedance specs are not given as such, but are used by CU to obtain the ratings.

To be concluded next month.

SINGLE HOPPING

When I started writing articles for the VUD a year ago, I mentioned that I'd answer any technical questions on related topics. Several DXers have written with questions, and all (I hope) have been answered via letter. Some questions have been directly related to DXing; others, although technical, not related. Again, especially for new members, send your questions. I'll try to answer them in the VUD in a special question/answer session in a July or August VUD.

Your editor has finally completed his antenna installations. A December ice storm had wiped out my old system and ended all DXing up to a few weeks ago. A 19-element JFD log periodic for 2-13, Finco 7 ft parabolic (under Allied's name) for UHF, FM4G FM yagi, and Winegard suburban Super Colortron mounted vertically are used now, all rotatable between 30 and 35 ft off the ground.

BOB'S TECH NOTES

BOB'S TECH NOTES

June 1969 - Page one

The ULTIMATE Receiver

One of the interesting exercises that you can indulge in, if you are technically inclined, is to calculate just how much gain a TV receiving system can tolerate, before natural laws of physics intervene.

It is possible to have too much gain. So much gain that if you add any more gain to the system, the product (picture and sound) are buried under the noise generated by the system itself (system gain and noise go hand in hand, until you reach a point where the noise generated by the high gain circuits is too strong for the desired weak signals to override.).

The overall gain of a TV receiving installation comes in four broad groupings:

(A) Antenna - which includes the gain of the antenna, height-gain (the additional gain you pick up by raising your antenna higher and higher), and more recently pre-amplifier gain, whether the pre-amp is built into the antenna, or added on.

(B) Receiver RF gain - which is the gain (amplification factor) of the receiver's RF stage, that is the first stage in the receiver tuner.

(C) Receiver i.f. gain - In most receivers (TV and otherwise) this is the area where the majority of the total system gain comes from. Modern black and white receivers have two or three stages of i.f. gain, most color sets have three. Some of the older top-of-the-line black and white receivers had four stages, 6 or so years back. Years ago DX'er James Gould of Kokomo, Indiana customized a receiver with six stages of i.f. gain. (A stage is usually a single tube, or transistor.)

(C) Video/Audio gain - Up to this point, the receiver has been dealing with RF (radio frequency) signals. Once these signals are converted into sound and picture electrons, they are amplified once again so that the sound is "loud enough" and the picture is "bright enough".

For reasons beyond the scope of this outline to discuss, there are practical limitations as to how many stages of gain each of the above categories can tolerate before the end result is bad. This is true of all of the above, except for antenna (non-amplified) gain. From this you can deduce quite accurately that a receiving system can stand infinite gain in the antenna, but no place else.

Very few of us have ever experienced a receiver where the gain was so high in one or more stages that we wished there was some way to turn the darn thing down. Such a receiver would, by design, have to have individual controls over RF, i.f., video/audio gain stages so that each could be run up to maximum permissible gain for a given set of receiving conditions.

All modern mass produced receivers have something called an AGC system, which is short for AUTOMATIC GAIN CONTROL. The AGC system electronically regulates the total overall gain of a receiver so that on weak signals the receiver operates at maximum design sensitivity, and on strong signals, the receiver's gain is lowered so that the receiver does not overload (ie. over-amplify the weak signals, causing a break down of the gain stages themselves). In most present day TV receivers, this AGC business is done in a single region of the receiver, usually the i.f. stage(s) region since this is where most of the TOTAL receiver gain comes from. In this type of situation, the receiver's RF gain stage and the receiver's video/audio gain stages run wide open all of the time, while the i.f. gain stages go up and down in total gain as the signals brought in by the receiver go up and down.

This approach to AGC systems (control one stage, leave the others alone) is a short cut to the proper approach. But it costs less to do it this way ... so ...

A much better approach is the so-called KEYED AGC system. In this system the actual amount of picture information being received at any instant is sampled at

a Video gain control on the front panel also, which is handy since my DAGE monitor does not have such a control (although one could be added easily).

Finally, there is an audio gain control. The CONRAC has a 600 ohm balanced audio output, with sufficient drive to drive an outboard hi-fi amplifier, or a pair of earphones as it stands (I prefer to DX with earphones anyhow), through a 600 ohm to 8 ohm matching transformer. The usual horizontal hold, etc. controls are of course on the monitor.

The astute DX'er has already noted that between the combined audio/video i.f. stages and the audio alone i.f. stages, we have a total of six. YES - here is a receiver which has audio gain aplenty. You can copy very nicely weak TV audio long before the picture is strong enough to lock into sync.

This is the MOST sensitive receiver I have ever worked with. In my typical suburban, built up, high noise neighborhood, in a city with maximum power transmitters less than seven miles away on channels 4,5,9 and 13, I concentrate for the time being on UHF. Here I can run the receiver wide open and put it to work on some well beyond the horizon stuff.

With a seven foot Finco parabolic dish, a mast mounted Blonder Tongue CMA-U UHF transistor pre-amplifier, 80 feet of aluminum jacketed 72 ohm coaxial cable (the antenna is 43 feet above ground), a Blonder Tongue BTX-11A UHF converter, the AV-12E produces 100 percent consistent (always there) signals from many 200 mile plus stations. One of these is channel 27 in Topeka, some 247 miles. With this set up I am experiencing for the first time UHF tropospheric scatter reception. This is a type of propagation that occurs day or night, rain or shine. Very minute (and extremely weak) particles of signal are scattered from small pockets of ever changing atmospheric pockets and return to earth over the horizon. The signal from such reception is always with heavy, rapid, random, flutter fading. Since the signal comes from far enough away that it will be affected by regular tropics, I have a very excellent tropics warning indicator. Whenever the rapid flutter fading quiets down and the signal stabilizes, I know that tropics conditions are forming. As the tropics conditions improve, the signal level builds. How much it builds and how long it holds in is a mark of how good the "opening" is.

Getting used to the AV-12E's wide range of gain controls is perhaps the most difficult adjustment to make. Because here for the first time I am actually in control of my receiver ... I am not forced to sit back helpless and take whatever it decides (or some engineer pre-decided for me) it should give me.

If you are ever in the Oklahoma City area, drop by for a demonstration. But first, write to The CONRAC CORPORATION, Covina, California 91772 and ask for the full details.

FEEDBACK - Channel Master 7008/7009 Traps

In May Teck Notes we discussed the new Channel Master tuneable traps, models 7008 and 7009. It is not advisable to series two of these traps (such as two 7008's for low band) UNLESS you place some form of fixed pad (attenuator) between the two traps. If you don't do this, tuning of one will drastically affect the other one. A 3 db pad is sufficient. If you are planning to use two of these traps (such as to clean up channel 3, by using one on channel 2 audio and one on channel four video), drop me a line for a sketch of how this has to be done.

And yes - you can insert one of these in the line and leave it there. The two I have seen to work just fine this way; the low band model passes high band through OK and the high band model passes low band through OK.

Anyone with a talent for light metal working should check the March and December 1968 QST's for two excellent articles on bandpass filters.
Bob Cooper, Jr.

the first video (picture) amplifier stage, and when this sampled signal is weak, the gain of both the i.f. stage(s) and the RF stage is raised; and when strong, the gain of the i.f. and RF stages is lowered. The gain of the entire receiver (not merely the i.f. stage(s)) is KEYED to the signal present at the first video (picture) amplifier stage. It follows that when the signal is weak, the picture information is weak and buried in snow (noise); that when the signal is strong, the picture information stands out above the snow (noise).

All of which leads us into the Ultimate TV DXing Receiver.

It is not cheap. The very best seldom is. But it is less money than a fancy color console in a pretty wooden case. It is a speciality item, ordered from the manufacturer direct. There is a three week or longer wait for delivery. The receiver is designed mainly for CATV operators, who have to have the best circuits available at the head end (antenna receiving) locations. And in fact, as you receive it from the manufacturer, it is only part of a receiver; the RF stage, the i.f. stages, the audio/ video amplifier stages, and the keyed AGC stages. There is no picture tube or speaker or pretty case included.

This is the CONRAC AV-12E. On the front cover this month you see a photograph of the AV-12E, mounted in a standard 19 inch (wide) electronic equipment rack. Above the CONRAC (at bottom of rack) is a companion item, in my case the DAGE 14 inch rack mounting monitor. (On top of the rack you see the AR-15 FM tuner which doubles as the sound system for the CONRAC)

(Without a picture tube or speaker, you provide your own. We won't discuss this aspect of that here, and if you are seriously interested AFTER you write to the manufacturer for more data than I will provide, drop me a line with your questions.)

The AV-12E shown in my shop is outfitted with the SU-213 turret tuner. The receiver is available with this 12 channel tuner, or with a crystal controlled single channel tuner. Obviously for TV DXing, you want the turret tuner, although for maximum gain on a single channel, the crystal controlled model is the ultimate-ultimate.

The SU-213 tuner is a neutrode type, with 6HQ5 RF amplifier stage and 6HJ7 mixer. The tuner's RF stage is AGC keyed, and offers as much sensitivity, freedom from overload and slop over as could be expected from ANY 12 channel receiver.

The receiver proper has FOUR audio/video i.f. amplifier stages; three 6BZ6's and a single 6CB6. There are two additional audio - only i.f. stages (6AN8 and 6AU6). The video detector is a diode (1N34 or 1N60). There are THREE video amplifier stages (6AQ5, 6DJ8, 5687).

The keyed AGC system has three tubes devoted to this function.

The AV-12E has a number of front panel controls not usually found on run of the mill receivers. One of these is a manual RF gain control, which allows you to tone down or bring up the overall sensitivity of the receiver at will.

Another is a three position AGC function switch. In one position, you have full AGC (for the technically inclined, the AGC window area can be set to your liking inside the receiver). In another front panel switch position you have delayed AGC, which means that the receiver's response to sudden changes in signal level is much less rapid. This is the best position for a signal with heavy, rapid fading, which is more OUT than in. The third AGC position is AGC OFF, which means that if you have the RF gain control turned up full, and the AGC off, the receiver is running at wide open sensitivity all the way through. In this position moderate level meteor bursts nearly overload the receiver.

Since the CONRAC is without picture tube and speaker, you provide these externally. In my case the video output from the CONRAC goes into a DAGE 14 inch monitor. Since the DAGE has three stages of video gain itself (remember the CONRAC has three also), we get into a "Each-too much gain" situation in this area. The CONRAC has

WESTERN TV DX

Dennis Park Smith
Music Department
University of California
Santa Barbara, California 93106
Deadlines: 12th of each month

Very little actual DX was seen this time; no Es activity was noted at all. However, we have much interesting discussion of DXers' activities, receiving equipment, and reception conditions in different areas.

Bob Cooper, Jr., 6221 Norman Road, Oklahoma City, Oklahoma 73121

I am slowly getting re-set up here in Oklahoma City. I live within seven miles of the 1500-foot-plus towers of locals on 4, 5, and 9, and have a healthy signal from local channel 13 as well. On UHF I have a relatively clear shot as only a day-time education station on channel 25 (about 5 miles) is present, then only during school days.

The antenna department is not complete yet, but will be by the time this is in print. On channels 2-6, I have a pair of 8-element broadbanded yagis (Finco). One is vertical, the other horizontal, at 30 feet, and rotator. On channels 7-13 I have three arrays: one 9-element SWAN broadbanded yagi, a stacked pair of 10-element Finco's, and a SWAN single-channel (8). The Swan 7-13 array rotates; the other two are fixed to the east or northeast. On UHF I am using the 7-foot parabolic, feeding a Blonder Tongue CMA-U (catv type) pre-amp. All arrays have separate aluminum jacketed 72-ohm feed lines and are brought into the shop into a bank of Dow-Key 72-ohm coaxial relays. By pushing the proper button on a control panel, the appropriate antenna is automatically connected to the proper filters, traps, single- or multiple-channel pre-amps, and so on.

The receiver is a CONRAC catv type that I will describe soon in Bob's Tech Notes. It produces a picture on a Dage 14-inch video monitor. Everything is rack and panel mounted. On UHF, I have a pair of Blonder Tongue BTX-11A tuneable converters. Both have been modified by several internal changes, also to be described at a later date in the bulletin.

Audio recording is automatic on a rack-mounted Ampex tape deck, which can be started or stopped by pre-set time clocks. Video recording is done with a chart recorder and a Blonder Tongue FSM-2 catv type field strength meter. A 35-mm camera mount on the rack gives me call slide photos as well.

At this date I'm still not sure what DX is. By that I mean that my 100-percent consistent UHF range is 250 miles (channel 27 in Topeka, Kansas), which is always there and useable. So UHF DX starts at something over 250 miles. I'm also using the Heath AR-15 FM tuner with the second UHF converter to copy UHF audio, as described in the March bulletin. However, the 250-mile Topeka station is so consistent on the Conrac TV set that there is no point in using the FM system on it. 73.

(Bob, your impressive installation really shows off UHF-TV as the medium it is and can be rather than the "poor, inconsistent" reputation it developed in the mid-'50's; some of these folks forget the early VHF problems. Your DX season ought to be a goody. dps)

Randy Miltier, 1760 Whitwood Lane #3, Campbell, California 95008

TV DX hasn't appeared yet here; it should be coming in soon, I hope. I'm looking for a good season with my new Winegard. '68 was my first year for sending out reports to TV stations; 10 reports were sent out and 8 of them verified. The 2 holdouts were CKOS-TV ch. 3 Yorktown, Sask. and CKOS-TV-3 ch 6 Wynyard, Sask. The veries included KNOP-2, KTWO-2, CKSA-2, KLNE-5, KRTV-3, KTVS-3, KFDX-3, and KAUZ-6. I think my mystery XLTV is without doubt KXLF-4 according to photo in July '68 VUD. I also have a photo of a KSTL-2 with "The International Kansans" on the ID; I think this is KCKT-2 and I should have sent a tentative but at the time I was just plain puzzled. What "KSTL" stands for is beyond me.

The new KMST-46 Monterey doesn't come in too good here. They would probably come in better if I put up my 6-ft.-diameter UHF antenna. The Winegard SC-83 doesn't

show me much as far as UHF goes; I can't even pick up the Fresno stations with it. Fresno came in fair (summer months mostly) with the "dish"; Bakersfield came in once in a while, too.

I have picked up some UHF translators here, too, for KOED-9, from south of here probably from Morgan Hill, Hollister, and Salinas. I haven't seen KLOC-19 Modesto yet. I'm only 60 miles from them but I think I have a mountain problem, hi. Good DX.

(For the best explanation of this "KSTL" thing--KCKT-2, KARD-3, etc. --see Jerry Pulice's report in May Eastern DX. Your antenna findings correspond with Bob's in the March issue of his Ultimate DXing series. Hope your DX season is good, Randy. dps)

ALC William G. Hauser, AF 15935294, Box C 8638, Lowry AFB, Colorado 80230

Since mid-April I've been more on the lookout for Es, but none seen yet as of 6 May. However, an Aquaria unexpectedly popped in as I was watching KFBC-5. The CBC TP at 0953 CST on 4 May must have been from "CBXT," Edmonton, Alta., a new station for me here. Previously seen by Es only at Albuquerque. In trying to locate Channel Master 7003 and 7009, I discovered that Electronic Parts here in Denver has a few Jerrold Trap-Eases (lowband only) left, which they'll dispose of for \$10 or less. Let me know if you're interested. Watch for my TVDX story in TV Guide this summer! - Until the next, 73 de Glenn.

(Now that most of the TV-DX fraternity knows about these Trap-Eases, I'm sure they'll have no problem selling them. dps)

Jerry Dee, 2426 West 7th, Waterloo, Iowa 50702

This is my first report to the Western DX section of the club, and I hope to make a regular "thing" with it.

A little note of introduction might be appropriate on my part. I'm 29 years of age, married, and have a little one on the way. I've been employed here at KXEL stations for 6½ years, but as you read this will be starting a new line of work as Quality Control Supervisor (ahhhh, titles) at the Wagner Manufacturing Company of Waterloo. We make overhead doors for garages. I will still be on the payroll of KXEL, listed as program director of KXEL-FM stereo. I've had that title for the last three years or so.

I DX with a 1968 Magnavox 23-inch color set (mainly for UHF) and a 1962 Magnavox black-and-white 21-incher...plus a 1954 Westinghouse 21-inch that I started DXing with 'way back in '54. It still performs better than about anything I've laid my hands on. In about a month, I'll have a 70-foot self-supporting tower upon which to mount my 2-bay Winegard Super-Interceptor and a planned 20-foot UHF parabolic I'm designing. (Talk about WIND-LOAD.) I'm sort of a tower nut. Back in '54 thru '58, I had a 120-foot tower with all the guy wires your heart could desire. When I went into the service, my dad politely (but firmly) asked me to dismantle it and I later sold the whole thing to a local CBer.

This was all in Winton, Iowa, about 30 miles southwest of Waterloo. From late 1958 to about 1967, I was pretty inactive as a TV-DXer, but came back strong the summer of '67 when I saw a super-duper E-skip opening to Cuba and the bug bit me hard. I resurrected the Winegard, added an antenna-mounted preamp, fed the sets with coax (75-ohm) and sat down to watch. Results have been pretty good, considering that for the past year I've been sharing a house with my wife and her mother. My antenna has been only 20 feet off the ground, mounted on a mast beside the garage. As of June 1, however, we will be in our own little pad in Waterloo, and I will hoist up another skyhook and proceed to make the neighbors think I work for the CIA or something with all the weird antennas and VHF, UHF, CB and WHOKNOWSWHAT.

Over this past Winter, I have added 20 stations to my totals with a lot of patient MS watched. I got photos of all but two and had a couple of others not verified. I've been getting WTIC-3 from Hartford, Conn. almost daily via MS, but ")# %&& %&& won't verify. I've tried every bit of diplomacy I can, but no go. And to make matters worse, I never can seem to hit the shutter button on the trusty 35 to get a photo verie. Don't I have troubles????

I first joined the old AIPA back in 1956, and stuck with it for about three

years before going to college and service. At that time, I could prove I had received about 300 stations. However, in the interim from 1958 through 1966, most of my records were destroyed by a flood in 1961 at my parent's home. Some of the veries still were legible, so I count them to this date. I now have a total of 186 verified, with a total of about 210 seen if I were to count the additional 24.

The only good thing regarding DX this year was the good tropo opening of Jan. 19th and 20th. I picked up only one new station, channel 11 from St. Louis, about 300 miles. I had Us and Vs from Illinois, Wisconsin and Missouri strong for two days straight, though. I have been around the sets a GREAT DEAL over the past year, and have noted E-skip only once, briefly on about January 28th. That was the open- ing I saw since last September when I got KID-3 from Idaho Falls. first

I fully expect to leave the station at about 3:30 this afternoon, turn on the CB in the car and hear a thunderous roar of skip, indicating that the MUF has hit at LEAST 80 megs and I'll log 78 new stations. But it just doesn't happen. I can't remember a summer Es season getting underway so late in 15 years. The CB hasn't even had much skip on it for three weeks in this area. And that's only 27 megs. Well, we can just hope, I guess. I work from 6 am to 2 or 3 pm now, and will shift to 8 to 5 next week at the new job. Maybe the change of hours will bring about a change of luck, too. Later....

(Yes, Jerry, I remember your activity in the AIPA days under your last name of Easter; welcome into the present fold. It is recalled that the 1961 summer Es season got under way late, around 20 May, but then when it hit, it was in almost every day. dps)

Dennis Smith —

There is no DX to report from here. Schoolwork has been paramount, though a little time has been spent on a project to be reported on in the near future.

I do have an item to pass along in connection with Bob's last Ultimate DXing article in the May VUD which may be of some help to anyone looking for a good used black-and-white television receiver from the early or middle 1960's. In the October 1968 Western DX column, I reported purchasing a B&W TV receiver from my sister and brother-in-law who had bought a color set. It is a Zenith 15-inch black-and white portable, Model L1620-3, Chassis 14L20, VHF only. As only VHF-UHF sets were manufactured after 30 April 1964, this set is probably 1963 or 1964 though I don't know for sure. It is in excellent condition and performs like a near-new receiver, which speaks for both its past care and the initial workmanship and parts quality. It uses a 3GK5 RF amp. tube, a 6EA8 oscillator-mixer, and three 4BZ6 tubes for the three IF amp. stages. I don't know how it compares with other Zenith sets of the same year, but it does have better sensitivity than our old 1954 Zenith 21" console (Chassis 19L28) did when both it and the antennas were new. It seems to do well in meteor-scatter DXing in spite of an antenna of inadequate gain for that purpose.

I'll be looking for lots of reports with the approaching season.

Best of DX to all

Dennis

HELP US FIND THESE PEOPLE - VOL. 2

WTFDA is attempting to locate DXers of the past. Their names are located here with their last known address in hopes that some of you out there know a more recent address and can put headquarters in contact with them. If you know where these people are, please drop us a card with their new address!

Charles W. Ashcom, 16564 Cherrylawn Ave., Detroit, Mich. (as of 1962)

Robert Berg, 1324 Noble St., Norfolk 3, Va., (as of 1962)

Richard Brelia, 35 Crown St., Brooklyn 25, NY (as of 1957)

Norm Burnes, 78 Stanton St., Buffalo 6, NY (as of 1960)

Don Butler, 10182 Papineau Ave., Montreal, Que. (as of 1957)

Bernard Canter, 281 Walnut Ave., Trenton 9, NJ (as of 1962)

John B. Clark, 300 Fifth St., Rock Island, Ill. (as of 1959)

DX

MAILBAG

P.O. BOX 5001
MILWAUKEE, WIS.
53204

Lots of correspondence to the mailbag this month especially with WFTDA convention time here.

First of all a great big hello to all the new members who have swelled our ranks in the past few weeks. Since we're sure everyone would like to know who the newcomers are, we'll take the space to list them along with all the renewals that've come in. Addresses for the new members along with all the addresses of other members will be found in our updated membership list which is being published with this month's bulletin.

New Members In May

James Mitchell, Fredericksburg, Va.	Clinton Day, Westerly, RI
Stan Garfield, Tenaflly, N.J.	Oliver Ferrell, NY, NY
John Rouse, Wallingford, Conn.	Dave Bright, Muscatine, Ia.
John Ebeling, Bloomington, Minn.	Hal Schrock, Paxton, Ill.
Ron Vastola, West Seneca, NY	

May Renewals Received

Donald Ruland	Roy Tucker (3 years)
Jeff Kadet	Ambrose Maxim (3 years)
Frank Merrill Jr.	Bill Migley
Fred McCormack	Bill Menke
Herbert Campbell	Mel S. Wilson (3 years)
Ron Azarkiewicz	

Going back a bit further, the month of April also brought in a flock of newcomers as well as a goodly amount of renewals.

New Members In April

Charles Batson, Richmond Va.	Dennis Glenn, Chicago, Il.
Ed Pelissier, Hermiston, Ore. (2 years)	
Dave Swanson, Romulus, NY	Pat Dyer, Austin, Tex.
Roy Tucker, La Mirada, Calif. (3 years)	
John Campion, Gillespie, Ill. (2 years)	
Kermit Harrison, Detroit, Mich.	Bill Eckberg, Walnut, Ill.
David Q. Glenn, Carlisle, Pa.	Rich Clark, Pittsburgh, Pa.
Tommy Buchanan, Darlington, S.C.	H. Herndon, Inglewood, Cal.
John Ramsey, W. Hartford, Conn.	J. Stoddart, Munster, Ind. (3 yrs.)

April Renewals Received

Paul Ciceri	Randy Miltier
Michael Northam	W.E. Tabb (2 years)
David Shapiro	J. Coker
Ken Cooper	

Based on our last peek in P.O. Box 5001 there were more coming in (probably trying to take advantage of the special money saving offer at the last minute - hi!) Anyway we're glad to have all of you join our rapidly growing club.

Turning to news from here and there:

Among our renewals we're happy to hear from one of our most mobile members - Don Ruland. Don, who holds some memorable "across the gulf" tropes records, is always on the move due to his sales responsibilities. Don adds to a short note "I do enjoy reading the digest and it is good to see the great progress being made. Keep up the fine work!"

Word from the South Side of town (Milwaukee that is) is that Dave Janowiak has his antennas up again. With Dave once again active on the TV bands, the rest of us Milwaukee area DXers probably won't have much to brag about this summer. (Dave has a pretty fair log you know!)

Frank Merrill Jr. sends us a 1-year renewal along with word that he doesn't have external antennas up yet. He adds "...am in a rather furious hurry to get the array installed....I want to be sure I hit the late May Sporadic-E opening which is almost certain to occur...." (Frank - I hope you made the deadline. The skip's been in -- late in May just like you said. We'll be looking forward to your summer reports)

Startled - yes we were. Last month Roy Tucker sent us a check for a 3-year membership in WTFDA. This month a 3-year renewal! What next? Roy says "Your letter mentioned you rarely see any \$10 checks for subscriptions so I am sending you another! With the price rise scheduled for this month I thought I had better get in my subscription extension at the old rates. I now have a six year subscription, suggesting my confidence in your long life and prosperity!" Thanks Roy! (Roy is another one of our members who likes the technical articles in VUD written by Bob Cooper and Dave Janowiak.)

Morris Sorenson (non-member) says in reply to our recent letter "Thanks for letter. I am still DXing but I am not very active due to university and summer job. I am quite interested in TV and would be interested in joining after I graduate in 1970 or 1971". (We hope much sooner Morris -- Why not now?) For those who have lost track of Morris since the demise of CDXC, you may reach him at Box 93, Emsdale, Ont.

A welcome addition to our club this month is Hal Schrock of Paxton, Ill. Hal has been DXing since 1937 and is active in all types of DXing. Welcome to the group Hal!

Another new member to WTFDA is Ron Vastola. Ron has compiled a fine record in approximately 15 years of TV DXing with over 200 stations logged. Ron is an artist who designs wallpaper as a profession. Between DXing and his work Ron also has time for a wife and family of three daughters. (Ron -- be sure to send a copy of your TV log to Glenn Hauser for the Statistics column!)

Another past AIPAer, James Mitchell (formerly of Dahlgren, Va.) joins the ranks. Jim says he hopes to "get back to TV DXing one day". No doubt Jim will be back twisting the dials sooner than expected now that he's in touch with the gang again.

Another of our new members -- also a past AIPAer -- is Oliver Ferrell, editor of Popular Electronics magazine. "Perry" sent a check for two years of fabulous membership in WTFDA. As a preview to the months ahead he notes "A special chapter in the 1970 Communications Handbook will detail the activities and membership requirements of all SWL clubs -- here and abroad" (hopefully including WTFDA). He also says a feature article on DX clubs is due in one of the fall issues of P-E.

FM DXers should welcome two additions to WTFDA -- John Ebeling and John Rouse. Hope some of you gung-ho FM veterans (Roger, Carlon, J.Fela, etc.) will drop these guys a line or two. Sure would like to see a few more FM reports and special FM features each month - hi.

DXing since 1952, Clinton T. Day of Westerly, R.I. is no stranger to many of us. Clinton may have aged a bit since his last DX report to AIPA, however, he still has time for scanning the bands along with many other hobbies ranging from collecting Polka records (hi-Ferdie) to taping comedy monologues. Clint uses a 19" portable RCA TV and Blonder-Tongue BTU 2-S UHF converter

At the bottom of this month's mailbag is a membership application from Dave Bright, Muscatine, Iowa. Dave has snared 228 FM stations and 60 TV stations. He heard about us from both Radio-TV Experimenter and World Radio-TV Handbook. He notes on the back of his application "I was very impressed with your Digest and the great amount of information it did have". (Needless to say, application accepted - hi.)

On that happy note we'll close up the mailbag and turn up the flag on the old mailbox for another month. Hope to hear from you!

TV

FOTO-FACTS

VHF-UHF DIGEST
JUNE, 1969

From time to time various articles of interest appear in publications which deal with photographing the CRT. When applicable to TV DX, such material will be reprinted in part or whole if worthwhile.

(The following material consists of excerpts from an article "Have You Tried Photographing TV?" which appeared in the Chicago Tribune on January 19, 1969)

"Photography of TV images is existing light photography -- that is, you are recording the light from the TV screen. If you try to use flash, you will get a picture of a television set with a blank screen. Because of the nature of the television image, which is composed of a series of horizontal scanning lines, you will have to use a shutter speed of $1/30$ of a second or slower. If you use a higher shutter speed you will record only a partial image.

Exposure for a well-tuned set with a bright image using a medium speed black and white film, such as Kodak Plux-X, is $1/30$ of a second at $f:4$. With a high speed black and white film, such as Kodak Tri-X, use an aperture between $f:5.6$ and $f:8$.

If you are going to use an automatic cartridge-load camera with a slow lens, use the high speed film. Many of these cameras will automatically set the camera at a slower shutter speed if a flashcube is inserted; so place a used, repeat used, flashcube in the socket for a better exposure.

Because television screens are small, you may have to use a close-up lens to fill your frame with the picture. With simple cameras use a 2+ close-up lens about 18 inches from the TV screen to obtain a good sized image on your film. If your camera focuses to 3 feet, you should be able to obtain an image of sufficient size from a 21-inch TV screen without close-up lenses.

If you have time, make some tests of pictures on your TV set with your lens set at different apertures. Remember to keep the shutter speed at $1/30$ of a second or slower. Keep a record of your exposures for future use.

You also can make color photographs of color television programs. Use a fast daylight color film, such as Kodak High Speed Ektachrome, with a trial exposure of $1/30$ of a second at $f:2.8$. With medium speed color film, set the aperture at $f:2$. If the pictures are slightly bluish, use a skylight or warming filter. If you do not have a fast lens, do not try to make color photographs or they will be underexposed."

HQ NOTE: As noted before in the Digest, color movies can also be taken off your TV, as well as b&w movies. B&W super 8 is now available. Super 8 is more expensive than regular 8 in b&w or color, and b&w can cost more than color if you buy Kodak rather than an off-brand. However, b&w is available in faster speeds than color so this partially explains the higher cost. In regular 8 color, Bill Heusmann and I prefer indoor (type A) film because it is slightly faster than the daylight film. There doesn't seem to be any great difference in the colors for TV photography) between the daylight and indoor films. Unfortunately, Kodachrome II color films are the only ones readily available and both are too slow for TV work. Sometimes they work and sometimes the resultant film is too dark. If a slower speed (fast action 12 fps) is used you're more likely to get good results than if you use the usual 16-18 fps provided as normal in most cameras. Inexpensive off-brands are quite adequate, and usually hi-speed films aren't needed either unless your camera is very simple. More expensive camera w/adjustments will pay for itself in money saved on film!!! fsd

June 1969

FM Deadline 10th of each month Roger W. Winsor

718 N. Fremont Road
Valparaiso, Indiana
46383

FM-DX

Fred Nordquist 104G Kings Park Drive Liverpool, NY 13088

FM DX has been limited to rare short trop openings to the west. No Es noted yet on either FM or TV this year. All DXing is limited to rabbit ears set up on the roof of our 2nd story apartment patio. Syracuse total up to 43 logged, with 37 NY, 3 Ont, 1 Pa, 1 DC and 1 Quebec. Here's what's been heard: 2/15 WBBN 102.5 NY MoR mx 1314 @135 mi., WHLD 103.3 NY weak w/MoR mx 1416 @ 140 mi., CHIL 95.3 Ont Nx and sports 2057 @185 mi., (isn't that CKDS Fred?), 2/16 WYSO 105.7 Ont MoR mx 1845 @155 mi., WCLI 106.1 NY Mutual mx 1930 @75 mi., WCLL 96.5 Pa s/off w/SSB 2059 @78 mi. 3/9 WMHR 102.9 Mars Hill Radio Syracuse w/0600-0000 sked & 100% reg. mx and programs w/3 vibrato IS pips on the 1/2 hr. Still nothing on 100.9 channel designated for Syracuse. 3/11 WGAY 99.5 DC drifted in for log, ID & MoR mx 2304 @300 mi. (my furthest so far). 3/15 CKVL 97.1 Que w/MoR mx, ID @0930 @220 mi. No DX noted since then, today is 5/4. We'll be moving into our own house in North Syracuse at the end of June, so address will be 302 Sandra Lane, No. Syracuse, NY 13212. First order of business will be to install my log-periodic antenna w/rotor on the roof of garage. The new location will be 11.3 mi. due north of chs. 3, 5 & 9 TV antennas. Good DXing and 73.

Bill Lens 5575 Spruce Wood Drive Cincinnati, Ohio 45239

Hello there. The FM band has been dead the past few weeks, so I thought this would be a good time to give a rundown on a few things. RX here is a 10 year old Pilot FA-540 nine tube FM/AM tuner with a motorola FMA-13 six element yagi, mounted 25' high on an Alliance C-225 rotor, fed by 35' of low-loss foam 300ohm twinlead. After 1 1/2 years of DXing, I have 316 stations logged (all confirmed on tape). 26 of which are via Es. Total states logged is 19, 14 on trop, 5 Es. Lowest powered trop is WUSO 89.1 Springfield, Ohio on 2/2/69 (10w 65 mi.). Best trop catch is KEYC 99.1 Mankato, Minn. on 4/7/69 100kw @591 mi, which is also my farthest trop. Best class A trop is WZMF 98.3 Menominee Falls, Wis. on 8/3/68 51w @526 mi. Best Es catch is CHNS 96.1 Halifax, NS on 7/27/68 (5,730 or 19,500w/1112mi), which is also my farthest skip. Lowest powered skip catch is WOVV 95.5 Ft. Pierce, Fla on 6/21/68 (2480w/851mi). Best class A skip is WCOF 95.9 Imokalee, Fla. on 6/21/68 (2950w/905mi). For a station to be logged, the policy here is to have convincing evidence of it on tape, which is an ID 99% of the time. I usually don't send for veries, except in certain cases like KEYC or CHNS. A little about me. I'm 19 and a full-time student at the U. of Cincinnati, majoring in Bus. Adm. In my nine years of active DXing, I have tried AM/TV/SW, but am convinced FM is THE band. By the way, line 23 of my last report should have read; Unn WEAU 104.5, not WIAL as they are still needed. Hi. Mx DX tests for 8/11-12 sounds like a great idea to me. I've already talked to local WAKW 93.3 about it and chances are good they'll ID AM. That's it for now. Should be some skip to report next time - I hope. (Bill, interesting to note you at U of C. I just logged WGUC 90.9 on 5/6.RWW)

Joseph Fela, Jr. 167 Godwin Avenue Newark, New Jersey 07112

It looks like Roger could use a few reports, so here's a rundown of my meagre DX so far this season. All times EST. 4/4 0610 WICH 97.7 Conn. and WAZL 97.9 Pa @0616. 4/6 2000 WCHR 94.5 NJ finally through much WPMF 94.7 splash;

Fela (cont'd.) 4/6 2300 WMVB 97.3 NJ; 2305 WGTS 91.9 Md noted; 2325 WINE 95.1 Conn. good; and at 2340 WSPK 104.7 NY noted // to WKIP 1390, they generally are completely separate from the AM. 4/7 0613 local WRFM 105.1 noted carrying HI, but off by 0545, as WGSA 105.1 Pa. noted then. 4/9 0530 WXUR 100.3 Pa. fairly weak, another ANer; 0540 WLBR 100.1 fading in/out. 4/14 0210 WPGC 95.5 Md. w/WABC off; 0232 WTIC 96.5 Conn. w/WWDB off; 0345 WDAS 105.3 Pa., the poorest Philly commercial FMer here. 4/15 WYZZ 92.9 Pa. at 0530 saying AN every night. 4/20 2325 WSID 92.3 Md. very weak w/WHOM. Local ANers are (* denotes 7 days a week) WPAT*; WNYC*; WFME*; WABC, WADB (ON Mondays, seems to test Sunday AMs) WOR*; WBAI runs to 0600, then it may or may not go off for an hour or so, WLNA ?-not sure, WPIX, WNEW*, WTFM, WFAS, WNCN*, WRFM, WHBI*, WRVR* and WRLB* AN most of winter, off for a few weeks, now back on. Surprisingly, I think, WCBS and WNBC are not AN and WNBC leaves the air around 2230 Sunday PMs, 0000 other days. I better not knock it, hi. One last thing. WLIB 107.5 seems to s/on @1200 weekdays and Saturdays, somewhat earlier Sunday. How do they get away with such a late s/on? (Don't knock it, Hi RWW)

Larry Vogt 8309 Greeley Blvd. Springfield, Va. 22152 ph. 451-8360

Hello from one of northern Virginia's lousiest locations, My home is 13 mi. SW of DC and conveniently located in a small valley less than 2 miles from some beautiful views, tnx Dad. I've been DXing FM SINCE last June, when I bought my Fisher FM 200-B. The purchase was prompted by the fact that DC finally got a few decent progressive underground programs. I've been DXing since 1960. My antenna is a Lafayette 18 element log-periodic VHF job mounted at 30' above ground and about the same distance below average terrain. With this antenna, stations peak in the proper direction only up to about 92 mhz. An Ameco preamp has been helpful in my logging of 21 states and Ontario in only 1 season. The excellent coaching of local FM DXer Bob McArthur helped even more. Non-skip stations have been logged from Conn., Del., Md., Mass., NJ, NY, NC, Ohio, Pa., RK, SC, Va and W. Va. My 15 skip stations received in 1968 are: 5/28 KMFA Austin Tex. 89.5 (1320 Mi @1.3kw), 6/5 KJRG 92.3 Newton, Kans (1095/100kw) KWNS 93.1 Pratt, Kans (1170/29kw), KCUR Kansas City, Mo. 89.3 (945/40kw), KANU 91.5 Lawrence, Kans. (975/108kw), KPFA 94.3 Scott City, Kansas (1285/56.9kw). 6/20 WSMC 90.7 Collegedale, Tenn. (525/80kw), WUSF 89.7 Tampa, Fla. (815/21kw), WWMT 95.7 New Orleans, La. (975/13.2kw), WLPR 96.1 Mobile, Ala (850/40kw), KMWU 89.1 Wichita, Kan. (1105/250 watts) WOW!! 6/21 KUHF 91.3 Houston, Texas (1230/9.8kw), KUT 90.7 Austin, Texas (1320/4.1kw), WQXY Baton Rouge, La. (990/100kw), 7/17 WHSA 89.9 Brule, Wis. (940/37.8kw) There is a peculiar propagation pattern from this area. Withe the exception of Es, at least 98% of the stations I've logged on TV and FM have been in an area bounded on the south by nothern. NC, on the west, NW and north by the Allegheny Mountains, and on the east by the Atlantic Ocean. I would be very interested in hearing from anyone in my area who can hear stations from Ohio, Ky, or western W. Va, Pa or New York. My particular FM hangup is low power. I'm still waiting for the first 10 watter, but my under 1kw list is: WSGM 93.5 Staunton, Va. 500w, WXRA 105.9 Woodbridge, Va 250w aux. stn, WGTB 90.1 Washington, DC QSL says 771.25 watts, WRTI 90.1 Philadelphia, Pa. 790 watts, WTJU 91.3 Charlottesville, Va. 750 watts and KMWU 89.1 Wichita, Kansas 250 watts. (Larry, with just that KMWU, I wouldn't care if a 10 watt station ever made it in. Hi. RWW). That about covers the situation from here for 1968. Until my next letter, 73 and best of DX and peace.

Welcome to the column Larry, and we hope you'll report to VUD often. RWW

Carlton Howington 13880 Greenland Avenue Uniontown, Ohio 44685

Well, it's time for another report. There hasn't been any real good DX yet this year, just the 200-300 mile range. One new local here is WNPQ 95.9 in New Philadelphia, Ohio. They are one from 6AM to midnight with stereo mx. To some DX: 2/20/69 WATH 105.5 in good at 6AM for a report. 3/1 WBEX/WAKW 93.3 fighting it out 6:15-6:30A. 3/22 WPQR 99.3 good o/WTHS @6:25A. 4/6 WDRK 106.5 o/local WXEN @7:14P. 4/7 WOI 90.1 @12:35A. (and this is not good DX???? RWW) 4/8 WCMJ 93.7 @9:30P. 4/21 big day here with WHKK 100.9 to complete all 100 FM channels, hrd @12:30A. Also hrd WPGC 93.5, WWDC 101.1, WGMS 103.5, WGAY 99.5, 5/1 WGCN 96.1 on w/AN show @4:30A, WJEJ 104.7 @5:30 s/on. 5/3 WDEL 93.7 @5:00 s/on, WGSN 105.1 @5:35A, WLYC 105.1 @6:00 s/on. 5/4 WILS 101.7 @12:14A and WYON 101.3 @12:30A. (Carlton, does WILS-FM dup. AM) 5/5 WMRP 105.5 strong at 12:01A, WSBM 106.3 12:10, WVMO 98.3 @12:30, WSAM 98.1 @1:00A w/AN RR pgming. WTOW 101.9 also hrd @1:45A. 5/6 a good catch in WDFM 91.1 in Univ. Park, Pa w/870 watts and an antenna on a 78' BAT at 180 miles. FM verie total up to 312 in 28 states. Some recent veries: KMOX, WOOD, WKNR, WCHO, WGLN, WBEX, WTOS, WHFM, WCTM, WDRK, WATH, WEJL, WJBI, WAKW, WJEH, WGMS and WGBE. Could somebody start a list of all the FM AN stations and types of music? This would be a great help for MS and some weak trop openings. Local AN stns here in NE Ohio WWSW 94.5, WDBN 94.9, WCLV 95.5, CFPL 95.9, WJR/WBUK 96.3, WKWK 97.3, WAKR 97.5, WTOF 98.1, WERE 98.5, WCFB 99.3, WABX 99.5, WMMS 100.7, WDOK 102.1, KQV 102.5, WCJW 104.1, WONE 104.7, WGLN 105.5, WAMO, WWWN 106.7 and WNOB 107.9. Many more can be heard, but cause no trouble here in Uniontown. 73 Carlton.

Glen Hauser Box C 8638, Lowry AFB, Colorado 80230

I've visited a couple more college stations to propose summertime tests. Both plan to be on anyway, but they beat watching. KCBL 91.3 at Colorado State in Greeley, now a 10 wattdr, hopes to install a new 1000 watt XMTR and move to new studios circa July. They should be on RS in summer anyway. Currently the hours are 1200-2400 CST daily. I'm sure they'd be interested in DX reports of both old and new facilities. The other is KRCC 91.5 at Colorado College in Colo. Springs. They're modifying their equipment, but probably won't increase power from 280w. Try for them w/mx tests and occasional IDs during afternoons and evenings, particularly Saturdays. It's possible they may have enough staffers for programming this summer. Also watch for tests from KCSU 90.9 Ft. Collins, as explained last month. I've hrd them in Denver now, occasional their 800w creeps above the noise, as on April 12 @2244 CST w/pop mx, 2245 EBS promo, 2251 some strong fade ins probably due to airplane skip, 2254½ ABC contemporary mx, 2259 "Sound service" ID. On May 3 I finally purchase a stereo amplifier for my H-K F1000T FM tuner. It's a Lafayette LA-224T, so no longer do I have to strain to hear weak signals. KFBC 97.9 hasn't been hrd as of May 5, since their program test of March 31. Until the next, 73 de Glenn.

Bob Cooper, Jr., 6221 Norman Road Oklahoma City, Oklahoma 73121

My first report to the FM column, although I've read it avidly each month and pleased to see it growing. I will be concentrating on FM and UHF-TV this summer, as time permits. I hope to report regularly. (me too, RWW). My FM DX installation isn't complete yet, but will be shortly. The receiver is the HEATH AR-15. I went over spec sheets for more than 25 tuners and tuner/receivers and finally decided that this receiver should be the very best available today. So far I have not been disappointed. The antenna system is close to the ground due to a lack of tower space, but effective. It consists of a 10 element

(Cooper cont'd) Fincoyagi, horizontal, and a second ten element vertical. Two separate 72 ohm coax lines come down and a coax relay switch selects the one I want instantly. The array rotates of course. I use stereo earphones most of the time, and have an Ampex 755 tape deck for recording. I record stereo, or mix both sides of the FM stereo-cast to a single side and run the WWV time signal on the second channel. This gives me an accurate time base to go back and take logging information from after an opening quiets down. By taping everything with the WWV time signal on the second channel, I just tune and listen and keep the log for later on.

The log at the end of the first two days hit 110 stations. I'm working on the "third layer" stuff now, that is those stations that I receive on trop scatter. These are the 240 to 400 mile outlets, such as Kansas City (296 mi), etc. I've broken stations down into the under 100 mile stuff, which is rock solid all of the time, the 100 to 250 mile stations which are subject to erratic fading, but usually 90% solid noise free stereo copy, and those 250-400 which, if they are 50kw up and with reasonably tall antennas (300 feet), are 10-15% solid copy on burst like trop scatter. While sitting on some of the third layer channels to tape enough for a logging record, I've had some fun with random metero pings (a ping is a short burst, usually under a second in length). Random pings from stations 600 to 1200 miles distant have been running about 10 per hr on some of the more populated channels. A "ping" at 1232 CDST on May 4th, for example, caught a station identification from WMGR 97.3 Bainbridge, Ga (800 mi or so).

For some who may be hearing local area stations to be on Es this summer, some of the following may be helpful: KMOD 97.5 apparently AN from Tulsa, WIBW 97.3 and KMBR 99.7 carry KC Royals baseball, KCKN 94.1 KC Mo AN ow, KWKI 93.5 ow and rr, KTOP 100.3 Topeka apparently AN w/MoR, WBAP 96.3 AN // to AM around 0050, KVRO 105.5 underground rock, KWSC 97.3 mostly Religion, KWTO 98.7 ow, KMAG 99.1 Ft. Smith, Ark won St. Louis Cardinals net, but not all games carried. In Oklahoma there is something called the Indian Nations Network, or INN. It is a news network, and many AM and FM stations co-op in this state, so if you hear a mention of INN, you probably have an Oklahoma station. 73, Bob Cooper, Jr. (Welcome to the column Bob, your setup sounds most impressive. I wish a little of that technical know-how would rub off on me. Hi. RWW)

Roger W. Winsor 718 N. Fremont Road Valparaiso, Indiana 46383

Well, a couple of new stations have crawled their way into my den, via trop, but as long as this old sun of ours keeps on spotting, it doesn't look like we will ever get any Es. Absolutely nothing! On May 6 a good trop morning, with WEPS 90.9 Elgin, Ill. @390 watts was logging, somewhat erratic signal, and when I rotated SE, I logged WGUC U. Of Cincinnati, also 90.9 w/olx mx. I sat on 90.5 for $\frac{1}{2}$ hr. to hear an ID out of WCBE Columbus, Ohio, and finally got one, but never sent a report, as too fady reception. May 7 WETN 88.1, only 10 watts from Wheaton, Illinois was logged from 6:57-7:05, bringing up my totals now to 236. Verifications received from all three reports to WEPS, WGUC and WETN. 73.

Well, that's it lads. A fine column, and I hope that many more just like this one will be coming this summer. Good cooperation was found this time, ie double-spaced typewritten reports. Several new members too, so it looks good for the FM side of DX. Larry Vogt, your printing was fine, and I look forward to many more VUD reports from you and all the others. Let's go for 5 pages!

LET'S TALK DB

Let's Talk db ...

Pre-Amplifiers

(PART TWO)

The pre-amplifier or booster is another type of animal. In antennas, we start out at '0' db reference point by using a dipole antenna as our '0' db starting spot. (We do this in antenna work because it is easy to duplicate, accurately, the dipole in Idaho, Hawaii or South Carolina. And if everyone starts out using the dipole as the standard '0' reference point, then a man building a '10 db' antenna in Idaho should end up with an antenna that works just like a '10 db' antenna built in South Carolina or Hawaii.)

With the pre-amplifier, booster or amplifier, our starting point is always the input signal level to the unit. A 20 db booster is simply a booster which will give an output signal 20 db stronger than the original input signal. It matters not one bit what the input happens to be - since the output will always be 20 db stronger, whether the booster is built in Idaho or Hawaii.

Transmission Lines

These are almost the reverse of pre-amplifiers, in db talk. In the pre-amplifier, we compared the output signal level to the input signal level, and measured the difference in plus db's.

In a transmission line, we measure the amount of signal that goes into the line (such as at the antenna), and then measure the amount of signal that comes out of the line at the other end (such as at the TV set). The amount of signal at the output end of the line will always be less than what went into the line, so we say that the line attenuates (subtracts from) the original input signal.

This is because, in a transmission line of any type, the wire itself is not a perfect conductor of the electron flow. As the electrons travel from the start (input) of the line to the end of the line (output) some of the electron flow energy is lost in the process. The minute flow of electrons over the outer surface of the wire conductor(s) has friction loss from the wire surface itself.

Since the electron energy stays on the surface of the metal conductor as it travels through the wire, it is the surface friction that counts. Silver is the best known conductor of electrons (ie. it offers the LOWEST friction), and copper is a reasonably close second. Silver is expensive, copper not quite so dear. So copper surfaced (or clad) wire is the most common transmission line. Silver would be better, but still far from perfect.

So in a transmission line we measure the subtraction (or loss) of electrons, from the start of the electron flow where the energy enters the T line at the antenna, to the end of their flow through the T line, at the receiver. This loss in electrons, during the flow, is called attenuation. And attenuation in T lines is measured (or expressed) in db's (so you expected pounds?).

It is one of the peculiarities of electronic-electron flow (as to contrast with electric electron flow) that the higher the frequency of the electrons (which is the same thing in TV as saying the higher the TV channel number), the more friction loss there is between the

Let's Talk db ... (Page seven)

so bad (due mostly to the lack of a good low noise - low Nf - RF stage in the UHF tuner), that manufacturers shy away from even posting the numbers.

'0' db In TV Work

Thanks mainly to the influence of CATV, where absolute levels (of signals) are very important, there has been an adoption of something called the '0' db reference point for TV work. You will run into this most frequently when leafing through CATV or MATV literature.

In this realm, '0' db is 1,000 microvolts. Cops ... slipped in a new term, didn't I!

Remember our linear scale for the TV field strength meter faceplate? The one with the 0-1,000 scale, in which the scale divisions were equal, from 0 to 1,000?

One of the easiest ways to calibrate a TV field strength meter (which CATV types abbreviate FSM) is in microvolts; or, millionths of a volt. All early FCC TV data was done up in microvolts, and today's FCC standard Grade 'A' and 'B' service contour areas are still measured in microvolts. So the early FSM's were calibrated in microvolts, and some of today's units are calibrated in both microvolts and db's.

Unlike the db, the microvolt is an absolute value. 1/1,000,000th of a volt. And unlike db's, when you have a 200 microvolt signal, and increase the signal to 400 microvolts on the meter scale (double the microvolt signal level indicated), you now occupy twice as much meter scale space on the meter faceplate.

The average TV receiver will lock into sync (ie. hold horizontal and vertical hold) with about 20 microvolts input. One low band (2-6) TV signals, the snow disappears from the screen - on the average set - at about 250 microvolts signal input. On high band, it may disappear as low as 150 microvolts input, while at UHF it typically is not snowfree until we get back up to 250 microvolts input again.

So on any band, 1,000 microvolts ('0' db in TV trade) is a pretty healthy signal. Well above the snow level, and adequate for good color reproduction on most color receivers.

It is at 1,000 microvolts that the CATV-MATV industry has established their '0' db reference point. In this field, a signal that reads 100 microvolts strong is minus (-) 20 db, while a signal that is 10,000 microvolts strong is plus (+) 20 db. If the two relationships don't make any sense to you, remember that db's are a log scale type of thing, and not linear.

Too Many db's

Let's close this treatment of the decibel by throwing in one more bit of essential information.

Any device that has electronic amplification circuits has an upper limitation as to how many db's of signal it can put out (at the output) before the device no longer functions properly.

wire surface and the electron flow. As a result of this, the attenuation (or db loss of the cable) goes up as the TV channel number goes up. To express this another way, if we start out at the antenna (going into the T line) with the same amount of electron flow energy at channels 2,6,7,13,14 and 83, we will, at the bottom or receiver end of the T line, have the highest signal on channel 2, next highest on 6, then 7,13, 14 and 83 in that order. Just remember - the higher the channel number, the greater the friction between the electron flow energy and the surface of the wire.

Since we are talking about db ... and we are going to use the decibel to measure how much loss there is in a given T line, we have to decide a starting or reference point again. We could say that there is so much db loss per foot, per inch or per any other unit of physical distance. But the loss is relatively small, even at channel 83, when you try to measure it for each foot of T line involved. So the people who turn out T lines adopted as their standard the 'so much loss - attenuation - per 100 feet.'

This is useful information when we are comparing T lines in a catalog, but it doesn't mean too much in our particular installation. At least not all by itself. Our own ultimate reference is the input signal to our T line run, at the antenna, for our installation. If we have a T line with 3 db loss at channel 13, we then know that at the bottom of our T line run, at the receiver, the channel 13 signal will be 3 db weaker (minus 3 db) than it was at the antenna.

Receiver / Pre-Amplifier Noise Figures

We noted in our discussion of antennas and the db that the reference dipole is 0 db, as a convenient starting point. In antennas, and pre-amps, we wanted lots of db's. In transmission line ratings, we want as few db of LOSS (minus db's) as possible.

What about receivers? In TV receiver specs, we never see a set of figures that tells us how many db gain the receiver itself has, although such figures would be very useful to DX'ers. (It is possible, if you have access to the original receiver stage by stage design data to go through and add up the cumulative gain of a receiver. This is standard practice for the original design engineers on any receiver project - and their files would show this data.)

It is possible, usually, if you dig deeply enough, to find something called 'noise figure'...; and it will be expressed in db's.

Without stretching this article out to over 100 pages, suffice to say that receiver and pre-amplifier noise figures are a little bit akin to T line LOSSES. The higher the noise figure (abbreviated Nf) in db, the more of the original input signal (from the T line) that is lost in the process of making a picture and sound from that electron flow. Noise figure ratings, when you can find them in the spec sheets, are usually in three sets; one for low band (2-6), one for high band (7-13) and one for UHF (14-83). Like transmission line losses, the Nf db figure goes up as the channel number increases. For comparison purposes only, 4 db is typical for low band, 5.6-6 db is typical for high band and 9 db is above average for UHF. 'Typical' UHF Nf is hard to come by anyplace, since when compared to VHF Nf, they are usually

Let's Talk db ... (Page eight)

This maximum output point is called the overload or saturation point of the device (usually an amplifier or pre-amplifier). Devices having such problems include the TV set too - witness the case of adjacent (strong) channel slop over onto an un-used channel locally.)

Most reputable manufacturers rate their pre-amps and amplifiers at 'so many db output before overload'.

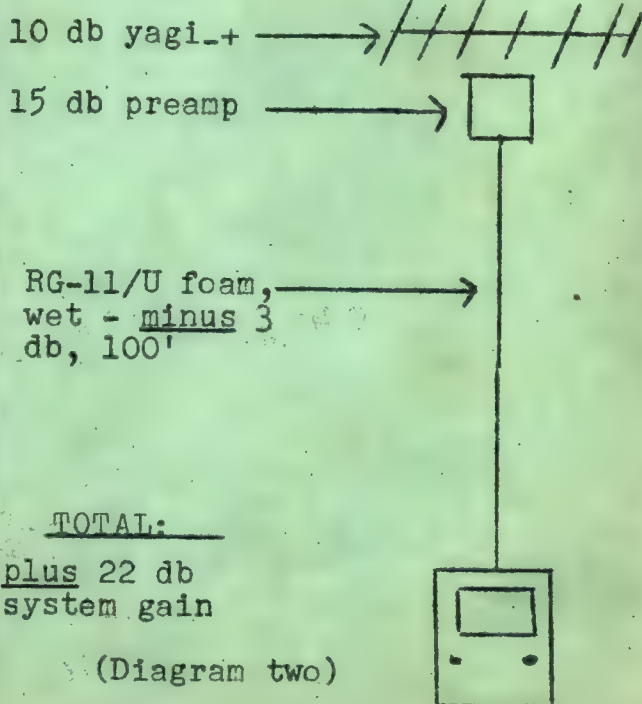
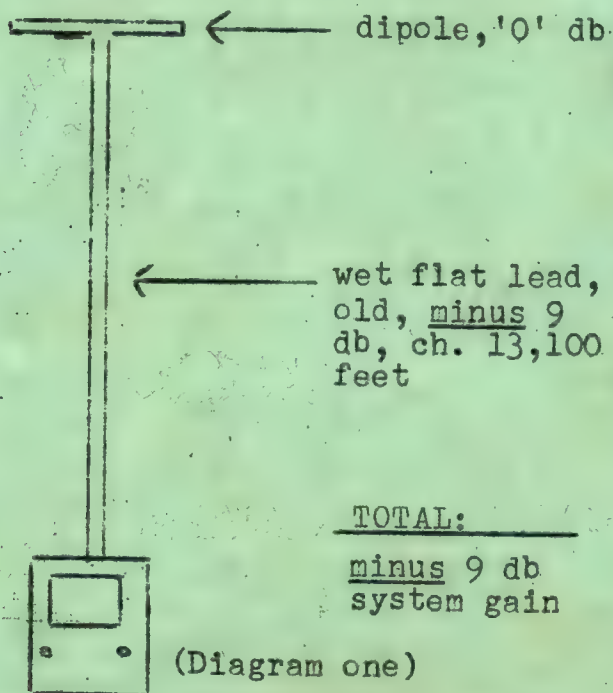
What is their reference point? The same 0 db that CATV-MATV people use; 1,000 microvolts.

An amplifier that is rated for plus 40 db output (which is the same as 100,000 microvolts if you care) will handle the specified number of channels, each at plus 40 db, at the output. Some units are rated at '5 channels, plus 40 db', others at '12 channels, plus 40 db'.

Now the amplifier itself may have 20 db gain, and have a maximum output rating of 40 db. What does this mean? Simply that if you run the unit with gain wide open (full up), you can run a signal into the unit at up to plus 20 db, which when added to the 20 db of gain in the unit itself, will give you the rated plus 40 db output (20 plus 20, or 40).

See the point? You add the input signal (referenced to 0 db) to the gain of the unit, to establish the output signal level ... and it is all done in db's.

Let's close this thesis with two examples, as shown below. Diagram one has our dipole antenna, high attenuation flat line T line, and other undesirable features. The signal input, in db, to the TV receiver is shown. Diagram two is the same installation, ala a good DX set up, and it is also expressed in db's.



Let's watch those db's and dig out that weak DX!

Bob Cooper, Jr.

MEMBERSHIP - LIST

MAY 25, 1969

John Allen, 910 York St., Quincy, Illinois 62301
Robert Astmann, 191 Louvaine Drive, Kenmore, New York 14223
Ron Azarkiewicz, (WA9RHU/WPE91HB), 8453 S. Hermitage, Chicago, Ill. 60620
Charles L. Batson, 10453 Medina Road, Richmond, Virginia 23235
Raymond M. Bell, 413 Burton Ave., Washington, Pa., 15301
William H. Bens, 5575 Spruce Wood Dr., Cincinnati, Ohio 45239
Dave Bright, 1804 Mulberry, Muscatine, Iowa 52761
Bedford P. Brown Jr., 33 E. Cedar St., Apt. 19F, Chicago, Ill. 60611
Tommy Buchanan, 418 Cashua St., Darlington, South Carolina 29532
Roger Bunney, Trelawne, Cupernham Lane, Romsey, Hants, England, SO58JH
Tom Burr, 417 Woodbury Terrace, Thorofare, New Jersey 08086
Herbert Campbell, Box 35, R.D. 2, Athens, Pennsylvania 18810
William Campbell, Macedon Road, Canadaigua, New York 14424
John F. Campion, 107 Gillespie Ave., Gillespie, Illinois 62033
Kenneth Chatterton, RFD #2, Mannsville, New York 13661
Paul Ciceri, 750 Champlain Ave., Windsor 21, Ontario
Richard K. Clark (KRP 3532), 144 N. Dithridge St., Pittsburgh, Pa. 15213
John Coker, Box 3131, W. Glen P.O., Peoria, Illinois 61614
Kenneth B. Cooper, 136 E. Peralta Way, Fresno, California 93705
Robert B. Cooper Jr., 4007 N. Pennsylvania, Oklahoma City, Okla. 73112
David S. Cox (WPE4FSM), Box 16, Carrollton, Alabama, 35447
Clinton T. Day, 22 Cross St., Westerly, Rhode Island 02891
Jerry Dee, 1759 Plymouth Ave., Waterloo, Iowa, 50702
Ferdinand Dombrowski Jr., P.O. Box 5001, Milwaukee, Wisconsin 53204
William J. Draeb (K9HJN), Ellis St., RR 2, Kewaunee, Wisconsin 54216
John C. Dyckman (WA3KFT/WA2AMB), Providence Court Apts., A-10,
37 State Road, Media, Pennsylvania 19063
Pat Dyer, 1411 Cloverleaf, Austin, Texas 78723
John Ebeling, 9209 Vincent Ave. So., Bloomington, Minnesota 55431
William Eckberg, RR #2, Walnut, Ill. 61376
Don Eggert, 1925 E. Bowman St., South Bend, Indiana 46613
Bruce Elving, 126 Glenwood Ave., Syracuse, New York 13207
Ralf Erler, 8231 Paulsdorf 11, DDR (Deutsche Demokratische Republik)
William D. Fait (WPE8INP), 346 Walworth Drive, Cleveland, Ohio 44132
Joseph Fela Jr., 167 Goodwin Ave., Newark, New Jersey, 07112
Oliver P. Ferrell, Editor - Popular Electronics, One Park Avenue,
New York, New York 10016
Henry Gac (WPE8JST), 1715 Holden, Detroit, Michigan 48208
Stan Garfield (WPE2Q1Q), 53 Glenwood Road, Tenafly, New Jersey, 07670
David Q. Glenn, 634 S. Bedford St., Carlisle, Pennsylvania 17013
Dennis Glenn, 6120 N. Wolcott Ave., Chicago, Illinois 60626
Morrie S. Goldman (WA9RAQ/WPE9FTZ), 8046 S. Euclid, Chicago, Ill. 60617
Stuart B. Grade (WPE0DDO), 3651 Halstead, Helser Hall, Iowa State
University, Ames, Iowa 50010
Joe Gragg, 1002 Hilltop Drive, Palestine, Texas, 75801
William Grant, 16 Goulding St., Worcester, Massachusetts 01609
John Hansen, 3001 Sangamon, Steger, Illinois 60475
Kermit C. Harrison, 5525 S. Martindale, Detroit, Michigan 48204
Glenn Hauser, Box C 8638, Lowry Air Force Base, Colorado 80230
Harley Herndon, 3403 1/2 West 82nd St., Inglewood, California 90305
William Heusmann (WN9WKF), 3116 Sangamon St., Steger, Illinois 60475
Hank Holbrook, 7211 Chestnut St., Chevy Chase, Maryland 20015
Carlton Howington, 13880 Greenland Ave., Uniontown, Ohio 44685
Paul Imming, RR #10, Peterborough, Ontario, Canada
Al Imwalle, 4245 Mad Anthony St., Cincinnati, Ohio 45223
Barry Jackson (WPE4HCF/KRM3374), Country Club Heights, RR #1, Maysville,
Kentucky 41056

Robert Jacoby, 556 E. Alvarado St., Pomona, California 91767
 David T. Janowiak, 3661 S. 46th St., Greenfield, Wisconsin 53220
 Jeffrey M. Kadet, 8047 Park Overlook Dr., Bethesda, Maryland 20034
 Dan Knepper (WPE8HGR), 1318 Potomac Dr., Toledo, Ohio 43607
 Albert J. Kopec, R.D. 1, Himrod, New York, 14842
 Edward Kowalski (K3PRE/WPE3AK), Box 13034, Philadelphia, Pa. 19101
 Mark J. Kozlowski, 306 Riverside Ave., Buffalo, New York, 14207
 Mark Lewis, 224 Honiton St., Downsview, Ontario, Canada
 Bill Lipis, Box 325, El Cajon, California, 92022
 Roderik Luoma, 15437 Asbury Park, Detroit, Michigan 48227
 Robert Mallory (K8WXW/WPE8JNR), 9151 E. Gorman Rd., Blissfield, Mo. 49228
 Tom Mann, 1805 E. Elmdale Court, Milwaukee, Wisconsin 53211
 Ambrose Maxim (WPE1ESB), 23 Lambert St., Winthrop, Maine 04364
 Bob McArthur (WA4BXQ), 11305 Lee Highway, Fairfax, Virginia 22030
 Fred McCormack (WPE0DSU), Des Lacs, North Dakota 58733
 Bill Menke (K2SUC), 923 E. State, Ithaca, New York 14850
 Frank Merrill Jr., 10673 Saline-Milan Rd., Milan, Michigan 48160
 Bill Migley, 210 S. Maple St., Lancaster, Ohio 43130
 Randy Miltier, 1760 Whitwood Lane #3, Campbell, California 95008
 James Mitchell, 2007 Washington Ave., Fredericksburg, Virginia 22401
 Gil W. Morgan, 133 S. Warwood St., Orange, California 92667
 Lance C. Muller, 8895 Halsted St., San Diego, California 92123
 Raymohd M. Nahl, (WA2ZPD), 90 Bryant Ave., Apt. 6B, White Plains, NY 10605
 Frederic J. Nordquist, 104G Kings Park Dr., Liverpool, New York 13088
 Michael B. Northam (WPE7CME), P.O. Box 605, Beaverton, Oregon 97005
 Gary A. Olson, 5901 W. Brown Deer Rd., Apt. 107, Brown Deer, Wis. 53223
 John Parillo, 400 S. Market St., Girard, Ohio 44420
 Edward V. Pelissier, Route #3, Box 415, Hermiston, Oregon 97838
 Paul Peterman, Augsburg College, Minneapolis, Minnesota 55404
 Wayne Plunkett, 124 John St., Weston, Ontario
 C. David Pomeroy, 3516 Lansdowne Dr., Apt. B., Lexington, Ky. 40503
 Keith Powers, 3434 N. Ripon Pl., Milwaukee, Wisconsin 53222
 Gerald Pulice, 143 Givson Ave., Staten Island, New York 10308
 John N. Ramsey, 22 Waterside Lane, West Hartford, Connecticut 06107
 Sister Bertha C. Roose (WPE0AXK), Immanuel Deaconess Home, 34th and
 Fowler Ave., Omaha, Nebraska 68111
 John Rouse (WPE1AK), P.O. Box 205, Wallingford, Connecticut 06492
 Donald B. Ruland, 10114 Antrim Lane, La Porte, Texas 77571
 Stanly Savage, 101 N. Ladera Vista Dr., Fullerton, California 92631
 Ronald F. Schatz, FTM, T Div, USS Hoel, DDG-13, FPO San Francisco,
 California 96601
 Hal Schrock, RR 1, Paxton, Illinois 60957
 Jack Schmermund (W8VSY), 401 N. Main St., West Milton, Ohio 45383
 Todd Schumann (KPJ8718/WPE9FYC), 2606 W. 105th St., Chicago, Ill. 60655
 Ed Semrad, 5625 N. 66th St., Milwaukee, Wisconsin 53218
 David Shapiro, Box 215, Stanleytown, Virginia 24168
 Dennis Smith, c/o Music Dept., U. of Calif., Santa Barbara, Calif. 93106
 Kempton J.C. Sandy Smith, 123 Northampton Terr., Chapel Hill, NC 27514
 Jim Stiles, 1820 Normandie Ave., Hollywood, California 90027
 James G. Stoddart, 8143 Linden Ave., Munster, Indiana 46321
 David Swanson, Box 131, Romulus, NY 14541
 W. E. Tabb Jr., 2142 Miami Rd., Euclid, Ohio 44117
 Ray Terlaga, 20 Fifth St., Ansonia, Connecticut 06401
 Richard Tidberg (WA9UDQ), Box 119A, Route #2, Winnebago, Ill. 61088
 Roy T. Tucker (K6UZB), 14109 Whiterock Ave., La Mirada, Calif. 90638
 Ronald Vastola, 79 Pamela Court, West Seneca, New York 14224
 Larry Vogt (K4UEO), 8309 Greeley Blvd., Springfield, Virginia 22150
 Frank Wheeler (WPE3DX), 6589 Wattsburg Road, Erie, Pa. 16509
 Stanton K. Wigh (WB6UY6), 2162 - 14th, Kingsburg, California 93631
 Robert J. Williams, Box 151, Blackfoot, Idaho, 83221
 Melvin S. Wilson (W2BOC/W1DEL), 17 Van Cortland Dr., Pittsford, NY 14534
 Roger Winsor, 718 N. Fremond Rd., Valparaiso, Indiana 46383

ANARC DXER CENSUS

1. Name _____
 Address _____
 Year Born _____ Occupation _____
 Education (If college student, give major) _____
2. What type of DXing do you do?
 _____ Long Wave _____ Amateur Bands _____ TV _____ FM
 _____ Medium Wave _____ Utility _____ Short Wave _____
 _____ Other (specify) _____
 Year Started DXing _____
3. Do you have an amateur or CB license? _____ Yes _____ No
 If yes, what are your call letters _____
4. Club membership:
 Presently belong to:
 _____ ASWLC _____ CIDX _____ IRCA _____ NNRC
 _____ NYSDXA _____ NASWA _____ WTFDA _____ NRC
 _____ Others _____
 Formerly belonged to:
 _____ ASWLC _____ CIDX _____ IRCA _____ NNRC
 _____ NYSDA _____ NASWA _____ WTFDA _____ NRC
 _____ Others (_____ AIPA _____ CDXC _____)
5. Make and model receiver(s) used: (1) _____
 (2) _____
 (3) _____
 Antennas Used: (1) _____
 (2) _____
 Other Equipment: (1) _____
 (2) _____
 Do you use a tape recorder? _____ Yes _____ No
 If yes, make and model: _____
 Other Equipment used for DXing: _____
6. Do you build any of your own equipment?
 _____ No _____ Yes, just from kits _____ Yes, from scratch
 _____ Yes, design and build equipment
 Do you repair and/or maintain your own equipment?
 _____ No _____ Yes, only simple repairs _____ Yes, all repairs
7. What publications in the radio/electronics/broadcasting field do
 you read regularly (excluding club bulletins)? _____

 What type of articles interest you most?
 _____ Feature articles on stations _____ Construction articles
 _____ Theory articles _____ Propagation articles
 _____ Other (specify) _____
8. _____ Please check this space if you would like information on
 other ANARC clubs.
 If you have any further comments or additional answers please
 list below, on back, or on separate paper. _____

 * Please complete this form and mail to: ANARC CENSUS *
 * Phil Sullivan, 152 Third St., Leominster, Mass., 01453, USA *

 Thank you very much!

LATE HEADQUARTERS NEWS:

It has come to our attention that some overseas prospective members may not be able to afford \$3.50 at one time for a year's membership due to lower standards of living, etc. Therefore, we are adding another payment rate for O/S subscribers only: 5 months for \$1.50. We hope this will induce more overseas DXers to join our organization.

The inevitable has happened: some new members (and renewals) have sent remittances too late to qualify for the old rates, but have nevertheless sent the old fee. Some were mailed on time but received late but in a couple cases the postmark was illegible and therefore the receiving date minus a day or two was used. All those on the membership list plus these are members under the old rates: Tom Henry, Bob Seybold, George Spachman, Roger Brown, and Estill Hall. The following however were mailed and/or received too late and therefore qualify under the new rate: Ray Terlaga, Dave Hanson, and Tom Leu. Tom did not send enough and therefore receives 9 months unless the extra \$1 is remitted. We are sorry but we must draw the line somewhere.

New members will henceforth be listed in the mailbag section.

We've had several free plugs in other publications recently: IRCA, NRC, ASWLC, Electronics Illustrated, and Practical TV (of England). We thank them all very much. We certainly appreciate it.

Gilfer Associates recently offered us a special bargain on their publication (published by WRTVH): "How to Build TV Antennas for All Channels." The regular price is \$2.75 postpaid, but through WTFDA you can obtain a copy for only \$1.00 postpaid. You must send remittance to WTFDA however. (Make checks payable to Gilfer Associates.) If you want 100 copies \$75, hi. (I might mention that although the book is very good it is European-oriented and therefore does not have parabolic dishes and log-periodic antennas, if that's your bag.) 73, fsd

WORLDWIDE TV-FM DX ASSN.
SERVING VHF-UHF DX ENTHUSIASTS
P.O. BOX 5001 HARBOR STA.
MILWAUKEE, WI. 53204, U.S.A.

THIRD CLASS

RETURN REQUESTED

Albert J. Kopec
RD #1
Himrod,
NY
14842

